T 1
C 7

PERIODICAL LIBRARY OF CONGRESS 1913 FEB


# THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON. TELEPHONE NUMBER—GERRARD 5356

No. VII. of Vol. I., 1913.
No. 4668. Vol. CLXXXIV. LONDON, SATURDAY, FEBRUARY 15, 1913. Pp. 160—Price 6d.



ROYAL SOCIETY OF MEDICINE,

1, WIMPOLE STREET.

For DIARY of MEETINGS see page 503.

By P. LOCKHART MUMMERY, F.R.C.S., Senior Assistant Surgeon to St. Mark's Hospital for Diseases of the Rectum.

THE SIGMOIDOSCOPE: a Clinical Handbook on the Examination of the Rectum and Pelvic Colon. Pp. x.+86, with 19 Figures. Price 3s. 6d. net.
London: Baillière, Tindall & Cox, 8, Henrietta-st., Covent Garden, W.C.

TREATMENT AFTER OPERATION.
By WILLIAM TURNER, M.S., F.R.C.S., and E. ROCK CARLING, B.S., F.R.C.S.
WITH A CHAPTER ON THE EYE.
By L. V. CARGILL, F.R.C.S.
Demy 8vo. Illustrated. 10s. 6d. net.
Published for the University of London Press by Hodder & Stoughton and Henry Frowde, Falcon-square, London, E.C.

Recently Published. Pp. viii.+192. Price, cloth, 3s. net.
AIDS to TROPICAL HYGIENE.
By Major R. J. BLACKHAM, D.P.H.Lond., R.A.M.C., Sanitary Officer, First Division, Indian Army, &c.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

Just Published. Crown 8vo. Price 1s. net; by post, 1s. 1d.
THE NON-SURGICAL TREATMENT of DUODENAL ULCER. By GEORGE HERSCHELL, M.D.Lond.
London: H. J. Glaisher, 55 and 57, Wigmore-street, W.

By ERNEST CLARKE, M.D., B.S., F.R.C.S.Eng., Surgeon to the Central London Ophthalmic Hospital; Consulting Ophthalmic Surgeon to the Miller General Hospital.
ERRORS OF ACCOMMODATION AND REFRACTION OF THE EYE.
Third Edition. Pp. x. + 228. With 86 Illustrations and Coloured Plates. Price 5s. net.
"This volume is the very best of the class that goes into everything with care and thoroughness. ..... The book merits the highest commendation."—CANADA LANCET.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

By W. SOLTAU FENWICK, M.D.
DYSPEPSIA.
Octavo, 485 pages. Illustrated. Cloth. 13s. net.
W. B. Saunders Company, 9, Henrietta-street, W.C.

By LESLIE THORNE THORNE, M.D., B.S.
NAUHEIM TREATMENT of DISEASES of the HEART and CIRCULATION.
Third Edition. Pp. 94. With 28 Photographs of the Schott Exercises and 28 other Illustrations. Price 3s. 6d. net.
"It is the best and most practical work on the subject."
—WEST LONDON MEDICAL JOURNAL.
London: Baillière, Tindall & Cox, 8, Henrietta-st., Covent Garden, W.C.

SECOND EDITION, with Illustrations, royal 8vo, 10s. 6d.
TREATMENT of LATERAL CURVATURE of the SPINE. By BERNARD ROTH, F.R.C.S.
"In speaking of the first edition we expressed the hope that this book would do something to check the unscientific and often disastrous treatment of lateral curvature of the spine by spinal supports and prolonged rest, and this new edition is even better calculated to show the good results which may be obtained in lateral curvature by posture and exercise."—THE LANCET.
"There can be no doubt that good work has been done by the author by his strong advocacy of the more rational method of treating lateral curvature of the spine by exercises."—BRITISH MEDICAL JOURNAL.
London: H. K. Lewis, 136, Gower-street, W.C.

By H. BELLAMY GARDNER, M.R.C.S.Eng.
SURGICAL ANÆSTHESIA.
With full instructions for the open ether method.
"A capital exposition of the principles and practice of anæsthesia."—THE LANCET. Messrs. Baillière, Tindall & Cox. Price 5s.

Third Edition (1912).
SAVILL'S CLINICAL MEDICINE.
"We confidently recommend Dr. Savill's book as a helpful and practical work."—THE LANCET.
"Thoroughly up to date."—BRIT. MED. JOURNAL, 1912.
"The wonderful accomplishment of a laborious task on pioneer lines."—ST. MARY'S HOSP. GAZ. Arnold, 41, Maddox-st.
By the same author.
LECTURES ON NEURASTHENIA. (Fourth Edition.)
"We know of no better guide to its diagnosis and treatment than Dr. Savill's masterly treatise."—MED. PRESS.
LECTURES ON HYSTERIA. Glaisher, Wigmore-st.

A PAGE OF
GOOD BOOKS ON SURGERY.
See Saunders' Advertisement on page 7.

Just Published, 8vo, 4s. 6d. net.
SYPHILIS, with SPECIAL REFERENCE to (a) Its Prevalence and Intensity in the Past and at the Present Day; (b) Its Relation to Public Health, including Congenital Syphilis; (c) The Treatment of the Disease.
A Discussion held by the Royal Society of Medicine, opened by Sir HENRY MORRIS, Bt., Dr. NORMAN MOORE, Mr. D'ARCY POWER, and Dr. F. W. MOTT, F.R.S. With Contributions by Mr. Ernest Lane, Mr. Jonathan Hutchinson, Mr. J. E. R. McDonagh, Major H. C. French, Major T. W. Gibbard, Sir George Savage, and others.
Longmans, Green & Co., 39, Paternoster-row, London, E.C.

Just Published. viii. + 280 pp. Price 5s. net.
With Original Photographs and 143 Special Prescriptions.
TREATMENT of DISEASES of the SKIN
BY KNOWSLEY SIBLEY, M.D. (CAMB.).
London: Edward Arnold, 41 & 43, Maddox-street, W.

NEW EDITION. In 2 vols. 45s. net.
DEFORMITIES, including DISEASES of the BONES and JOINTS. A Text-Book of Orthopædic Surgery. Illustrated by 70 Plates and over 1000 Figures, and by Notes of Cases.
By A. H. TUBBY, M.S.Lond., F.R.C.S.Eng.
Second Edition: "The standard text-book in English on the subject."
—THE LANCET.
First Edition: "Standard work on the subject in the English language."—BRITISH MEDICAL JOURNAL.
Macmillan & Co., Ltd., St. Martin-street, London, W.C.

102 Illustrations. 10s. 6d. net.
DISEASES of the RECTUM, ANUS, and SIGMOID COLON. By F. SWINFORD EDWARDS, F.R.C.S., Senior Surgeon to St. Mark's Hospital for Cancer, Fistula, &c., and to St. Peter's Hospital for Urinary Diseases; Consulting Surgeon to the West London Hospital.
London: J. & A. Churchill, 7, Great Marlborough-street.

THE INDICATIONS for WIDELY RESECTING the BLADDER WALLS in VESICAL GROWTH.
With 4 Plates. Cloth. 3s. 6d. net.
By E. HURRY FENWICK, F.R.C.S.,
Professor of Urology at the London Hospital;
Vice-President of International Society of Urology, and President to its Second Congress.
New Work.
London: Adlard & Son, Bartholomew-close.

THE TECHNIQUE AND RESULTS OF
RADIUM-THERAPY in MALIGNANT DISEASE. By H DOMINICI, M.D., and A. A. WARDEN, M.D., Paris. Reprint of Demonstration given at 78th Annual Meeting of British Medical Association, London, July, 1910, with additional Plates and more recent Notes, March, 1912.
London: J. & A. Churchill. 1912. Price 2s. net.

NERVES AND THE NERVOUS—Includes a Chapter on Psycho-Therapy.—By EDWIN L. ASH, M.D.Lond.
NURSING MIRROR says:—"We can strongly recommend....."
New Ed., 3s. 6d. net. Mills & Boon, 49, Rupert Street, W.

# "COFECTANT" (Reg.)

## IN SEPTIC CONDITIONS OF THE MOUTH & THROAT.

**"COFECTANT"** in dilution (1 in 1000) is a valuable application in cases of Bacillary and Cocceal Infections of the Mouth and Fauces.

**"COFECTANT" LOZENGES** (Cofectant, Eucalyptus, and Peppermint) are of therapeutic value in similar cases, their action being milder but more prolonged.

**"COFECTANT"** was shown by "The Lancet" Commission to be the most effective disinfectant fluid obtainable.

*Samples and Literature on application to the Sole Manufacturers,*

**EDWARD COOK & CO., Ltd.,** The Soap and Disinfectant Specialists, **BOW, LONDON, E.**

# Valentine's Meat-Juice

In **Hospital** and **Private Practice** during **Epidemics** and **in their own persons** when ill, **Physicians** have demonstrated the **Value** of **Valentine's Meat-Juice** in **Sustaining** and **Strengthening** the weakened **Vital Forces.**

**Pneumonia *and* Influenza.**

**Frank Van Fleet, M. D.,** *Professor Diseases of the Eye, New York Post-Graduate Medical School and Hospital, New York City:* "I was unfortunate enough to contract double Pneumonia last winter, which was followed by double Pleurisy and Empyema. During several weeks of unconsciousness I was nourished (after milk began to disagree with me) with VALENTINE'S MEAT-JUICE exclusively."

**Cavalier Dr. Enrico Ballerini,** *Late Surgeon to the Hospital of Rome, Italy:* "I have used VALENTINE'S MEAT-JUICE in the treatment of patients and also personally after having been ill with Influenza, and I must say it is an excellent tonic in conditions of great organic weakness. I have prescribed it with the greatest satisfaction for convalescents and invalids restricted to a liquid diet."

For Sale by European and American Chemists and Druggists.

**VALENTINE'S MEAT-JUICE COMPANY,**

**RICHMOND, VIRGINIA, U. S. A.**

D 175

# THE LANCET.

No. 4668. Vol. CLXXXIV. LONDON, SATURDAY, FEBRUARY 15, 1913. Pp. 160.

# CONTENTS.

*The whole of the literary matter in THE LANCET is copyright.*

**HUNTERIAN LECTURE** on the Paths of Infection in Genito-Urinary Tuberculosis. Delivered before the Royal College of Surgeons of England on Feb. 3rd, 1913, by K. MACFARLANE WALKER, F.R.C.S. Eng., M.A., M.B., B.C. Cantab.—(*Illustrated*).... 435

**ORIGINAL ARTICLES.**

Appendicitis: a Plea for Immediate Operation. By EDMUND OWEN, F.R.C.S. Eng., Surgeon to the French Hospital, London..... 441

The Remote Results of Tonsillotomy and Tonsillectomy: an Analytical Scrutiny of 220 Unselected Cases. By HAROLD WHALE, M.D. Cantab., F.R.C.S. Eng., Assistant Surgeon, Metropolitan Ear, Nose, and Throat Hospital ..... 444

An Operation for Hypospadias. By ARTHUR EDMUNDS, M.B., M.S., B.Sc. Lond., F.R.C.S. Eng., Surgeon to the Great Northern Central Hospital; Assistant Surgeon to King's College Hospital. — (*Illustrated*)..... 447

On a Case of Addison's Disease in a Boy aged Ten Years. By FREDERICK LANGMEAD, M.D. Lond., M.R.C.P. Lond., Assistant Physician to the Royal Free Hospital; the Hospital for Sick Children, Great Ormond-street; and the Seamen's Hospital Society (Dreadnought), Greenwich.—(*Illustrated*)..... 449

Polycystic Disease of Kidneys: Remarkable Persistence of Functions in Two Cases in Adults. By H. RISCHBIETH, M.A., M.D., B.C. Cantab., F.R.C.S. Eng., and C. P. C. DE CRESPIGNY, M.D., B.S. Melb., Pathologist, Adelaide Hospital, South Australia.—(*Illustrated*)..... 450

Note on a Case of Chronic Internal Hydrocephalus. By JAMES RAE, M.A., M.D. Aberd., Assistant Medical Officer, Park Hospital for Children, Hither Green ..... 453

The Action of Scharlach R Upon X Rayed Skin. By J. O. WAKELIN BARRATT, M.D., D.Sc. Lond. (From the Cancer Research Laboratory, The University, Liverpool.—Mrs. Sutton Timmis Memorial.)—(*Illustrated*)..... 454

**MEDICAL SOCIETIES.**

ROYAL SOCIETY OF MEDICINE:
SECTION FOR THE STUDY OF DISEASE IN CHILDREN:—Exhibition of Clinical Cases and Pathological Specimens..... 457
SECTION OF ANÆSTHETICS:—Use of Nitrous Oxide and Oxygen in Major Surgery.. 459
SECTION OF OPHTHALMOLOGY:—Exhibition of Cases.—The Physiology of Intraocular Pressure..... 459
SECTION OF BALNEOLOGY AND CLIMATOLOGY:—Discussion on "Fibrositis"..... 460

LIVERPOOL MEDICAL INSTITUTION:
Exhibition of Specimens.—Fulminating Pneumonia.—Some Studies in Anaphylaxis 461
SHEFFIELD MEDICO-CHIRURGICAL SOCIETY:
Internal Derangement of the Knee-joint.—Osteomyelitis and Periostitis of Tibia.—Stone in the Kidney ..... 461
GLASGOW MEDICO-CHIRURGICAL SOCIETY:
Cancer of the Colon ..... 462
ÆSCULAPIAN SOCIETY:
Modern Methods of Diagnosis in Certain Digestive Diseases 462

**REVIEWS AND NOTICES OF BOOKS.**

An Introduction to the Study of the Protozoa with Special Reference to the Parasitic Forms. By E. A. Minchin, F.R.S. ..... 463

Experimental Physiology. By E. A. Schäfer, F.R.S..... 463

Diseases of the Nervous System. By Judson S. Bury, M.D. Lond., F.R.C.P. Lond., B.Sc. Vict..... 464

Pathologische Anatomie des Ohres. Von Rudolf Panse... 464

Diseases of the Skin. By Willmott Evans, M.D. Lond., F.R.C.S. Eng..... 464

Health and Medical Inspection of School Children. By Walter S. Cornell, M.D..... 465

The National Insurance Act, 1911. Being a Treatise on the Scheme of National Health Insurance and Insurance against Unemployment Created by that Act, with the Incorporated Enactments, Full Explanatory Notes, Tables, and Examples. By Orme Clarke. Second edition 465

Maladies du Pancréas, de la Rate, et du Mésentère. Par G. Chavannaz et J. Guyot .... 465

Systematic Case-Taking: a Practical Guide to the Examination and Recording of Medical Cases. By Henry Lawrence McKisack, M.D. R.U.I., M.R.C.P. Lond..... 466

Gynäkologisches Vademekum für Studierende und Aerste. Von Dr. A. Dührssen..... 466

Die Gallensteinkrankheit und ihre Behandlung vom Standpunkt des inneren Mediziners und Chirurgen. Von Dr. Karl Grube und Dr. Henry Graff... 466

Geometrical Optics. By Archibald Stanley Percival, M.A., M.B., B.C. Cantab..... 467

Annals of Tropical Medicine and Parasitology..... 467

The Students' Human Physiology: a First Year's Course in the Practice and Theory of the Subject. By Ernest Evans..... 467

Chirurgische Instrumente des Altertums. Ein Beitrag zur antiken Akiurgie von Dr. med. et jur. Theod. Meyer-Steineg ..... 468

Catalogue of the Etched Work of Frank Brangwyn, A.R.A., R.P.E..... 468

**NEW INVENTIONS.**

Improved Armlet for Sphygmomanometers.—(*Illustrated*)... 468

An Abdominal Retractor.—(*Illustrated*)..... 468

**LEADING ARTICLES.**

THE ADMINISTRATIVE CONTROL OF TUBERCULOSIS..... 469
THE HISTORY OF THE ENZYME 470
HEART DISEASE IN CHILDREN 471

**ANNOTATIONS.**

The Tragedy of Captain Scott's Expedition ..... 472

Energy Materialised..... 472

Softening of the Spinal Cord in a Syphilitic after an Injection of Salvarsan ..... 473

The All-India Sanitary Conference..... 473

Circumscribed Peritonitis Due to Intestinal Perforation in Typhoid Fever ..... 473

Atmospheric Pollution ..... 474

Passive Human Carriage of the Virus of Poliomyelitis ..... 474

The African Blackwater Fever Inquiry..... 475

Sacrodynia in Cancer of the Pancreas ..... 475

Contraction of the Dental Arch and Nasal Stenosis..... 476

VITAL STATISTICS:
Health of English Towns..... 478
Health of Scotch Towns ..... 479
Health of Irish Towns ..... 479

**SPECIAL ARTICLES.**

The Organisation in London of the Treatment of Tuberculosis ..... 476

Medicine and the Law: Two Cases of Alleged Ptomaine Poisoning.—Fleet *v.* Johnson and Sons: Workmen's Compensation.—The Sale of Hypnotic Drugs..... 477

The Services ..... 479

Cholera and War in the Near East ..... 484

The All-India Sanitary Conference: The President's Address.—Town Planning.—Plague.—Travelling Dispensaries.—Water-supply.—Cholera, Dysentery, and Tuberculosis.—Mediterranean Fever.—Enteric Fever.—(*To be concluded*)..... 486

Manchester ..... 488
Bristol and Western Counties... 488
Scotland..... 489
Ireland..... 490
Paris..... 491
Berlin..... 492
United States of America..... 493

**THE NATIONAL INSURANCE ACT.**

The Working of the Act ..... 495
The London Insurance Committee ..... 495
The Case of the Dependents..... 495

**CORRESPONDENCE.**

Phlebitis and Thrombosis (Sir Dyce Duckworth, Bart.) ..... 481

Researches in Colour Vision (Dr. F. W. Edridge-Green).... 482

The Pathogenicity and Virulence of Bacteria (Dr. E. C. Hort and Dr. W. J. Penfold) 482

An Interesting Exhibition of Raynaud's Phenomena (Dr. Edward C. B. Ibotson) ..... 482

Artificial Respiration (Mr. John Fredk. Briscoe)..... 483

Serum Treatment in Melæna Neonatorum (Dr. Wilson Tyson)..... 483

Therapeutic Use of Vaccines in Typhoid Fever (Dr. J. G. Callison)..... 483

The Order of St. John of Jerusalem ..... 483

Chewing-Gum (Dr. H. Kerr).... 484

**OBITUARY.**

Henry Eales, M.R.C.S. Eng..... 494

Leonard Noon, M.B., B.C. Cantab., F.R.C.S. Eng..... 494

Joseph Bayley, M.R.C.S. Eng., L.S.A. ..... 494

Deaths of Eminent Foreign Medical Men..... 495

**MEDICAL NEWS.**

Eugenics Education Conference 446

Freemasonry at the International Congress of Medicine 446

The Royal Sanitary Institute... 446

University of London, University College ..... 453

Royal Sussex County Hospital 468

The After-care Association ..... 484

Harveian Society of London... 493

The Association of Certified Dispensers ..... 493

Royal United Hospital, Bath ... 495

The Albert Medal for a Wiltshire Nurse ..... 496

West London Medico-Chirurgical Society: The Annual Dinner ..... 496

The Bristol Medical Charities... 497

A Cornish Centenarian ..... 497

Ockenden (Torquay) Convalescent Home ..... 497

University of Birmingham..... 497

National Hospital for the Paralysed and Epileptic, London 497

Medico-Psychological Association of Great Britain and Ireland..... 497

West Sussex County Council: Medical and Sanitary Duties 497

**PARLIAMENTARY INTELLIGENCE.**

Notes on Current Topics: The Insurance Act in Operation.—The Chancellor of the Exchequer's Reply..... 497

House of Commons..... 499

Books, &c., received ..... 501
Appointments ..... 501
Vacancies ..... 502
Births, Marriages, and Deaths 502
Notes, Short Comments, and Answers to Correspondents... 503
Medical Diary ..... 503

**FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.**

# INDEX

## MEDICAL AND OTHER BOOKS AND PUBLICATIONS


PAGE

**ADLARD & SON:—**
Fenwick .... Indications for Widely Resecting the Bladder Walls ..... Cover 1

**ARNOLD:—**
Cammidge .. Glycosuria, &c. ..... 5
Hawthorne.. Forensic Medicine, &c. 5
Howard .... House Surgeon's Vade-Mecum ..... 5
Humphris .. Electrotherapeutics .. 5
Hutchison .. Diseases of Children .. 5
,, .. Food, &c. ..... 5
Keith .... .. Human Embryology .. 5
Lodington & Arkwright. Carrier Problem in Infectious Disease ..... 5
Leftwich .... Tabular Diagnosis .... 5
Macleod .... Diabetes, &c. ..... 5
Savill ..... Savill's Clinical Medicine ..... Cover 1
Sibley ..... Diseases of Skin. Cover 1
Vincent..... Internal Secretion, &c. 5

**BAILLIERE, TINDALL & COX:—**
Blackham .. Aids to Tropical Hygiene ..... Cover 1
Clarke, E. .. Errors of Accommodation and Refraction of the Eye ....Cover 1
Gardner .... Surgical Anæsthesia ..... Cover 1
Mummery .. Sigmoidoscope .. Cover 1
Thorne..... Nauheim Treatment of Diseases of the Heart Cover 1

**CASSELL & CO.:—**
Morris, Sir H. .... Diseases of the Skin .. 6

PAGE

**CHURCHILL, J. & A.:—**
Cripps ..... Cancer of the Rectum.. 6
,, ..... Diseases of the Rectum 6
Dominici & Warden .. Radium-Therapy in Malignant Disease ..... Cover 1
Edwards .... Diseases of the Rectum, &c. ..... Cover 1

**CORNISH BROS.:—**
Sawyer, Sir J. Contributions to Practical Medicine ..... 6
,, Vasomania ..... 6
,, Coprostasis ..... 6
,, Maladies of the Heart.. 6

**GLAISHER:—**
Herschell.... Treatment of Duodenal Ulcer ..... Cover 1
Savill ..... Neurasthenia .. Cover 1
,, ..... Hysteria..... ,, 1

**GRIFFIN & CO.:—**
West..... Organs of Respiration 6

**HILTON & CO.:—**
Ghosh & Das..... Hygiene and Public Health..... 6

**HODDER & STOUGHTON** AND **H. FROWDE:—**
Turner & Carling.... Treatment after Operation..... Cover 1

PAGE

**LEWIS:—**
Byrne ..... Physiology of the Semicircular Canals ..... 3
,, ..... Sea-Sickness & Health. 3
Greeff ..... External Diseases of the Eye ..... 3
Honan ..... Handbook to Medical Europe ..... 3
Lewis's Medical Ledger ..... 3
Oliver ..... Studies in Blood-Pressure..... 3
Rawling .... Landmarks, &c., of the Human Body..... 3
Roberts .... Theory and Practice of Medicine ..... 3
Roth ..... Lateral Curvature of the Spine ..... Cover 1
Stitt ..... Practical Bacteriology. 3
Swanzy & Werner.... Diseases of the Eye .. 3
Tilley ..... Diseases of the Nose .. 3
West & Scott..... Aural Surgery ..... 3

**LONGMANS, GREEN & CO.:—**
Syphilis..... Cover 1

**MACMILLAN & CO.:—**
Ballance .... Cerebral Decompression in Ordinary Practice.. 6
Luciani .... Human Physiology.... 6
Savage ..... Milk and the Public Health ..... 6
Tubby ..... Deformities .... Cover 1

**MEDICAL PUBLISHING CO.:—**
Lane ..... Operative Treatment of Fractures ..... 8
,, ..... Cleft Palate and Hare Lip ..... 8

PAGE

**MILLS & BOON:—**
Ash ..... Nerves and the Nervous Cover 1

**NISBET & CO.:—**
Lane..... Treatment of Chronic Constipation ..... 8

**SAUNDERS COMPANY:—**
Bickham .... Operative Surgery .... 7
Crandon & Ehrenfried Surgical After-Treatment ..... 7
DaCosta .... Surgery ..... 7
Dannreuther Minor Surgery ..... 7
Eisendrath.. Surgical Diagnosis .... 7
Fenwick .... Dyspepsia ..... Cover 1
Good Books on Surgery ..... Cover 1
Gynecology and Abdominal Surgery. 7
Keen's Surgery ..... 7
Moynihan .. Duodenal Ulcer..... 7
Mumford.... Practice of Surgery .. 7

**SPRAGUE & CO.:—**
Ernst..... Orthopædic Apparatus Guide ..... 8

**MEDICAL LIBRARIES, &c.:—**
Baker, Birmingham—Books ..... 8
Behnke—Stammering ..... 8
Gibson & Sons—Medical Practitioners' Pocket Day Books..... 8
Ketley—Shorthand ..... 8
Matthews Bros.—Wood: Application of Trusses .. 8
Squire & Sons—Squire's Companion ..... 29
,, London Hospitals..... 29


## OFFICIAL AND GENERAL ANNOUNCEMENTS


**APPOINTMENTS VACANT:—**
Ashton-under-Lyne Union Workhouse 75
Bedford County Hospital ..... 74
Birkenhead Borough Hospital..... 76
Birkenhead Union Infirmary ..... 74
Birmingham and Midland Eye Hospital ..... 75
Birmingham and Midland Free Hospital for Sick Children..... 76
Birmingham Union Infirmary ..... 76
Birmingham Union—Monyhull Colony for Epileptics ..... 76
Bradford Children's Hospital ..... 75
Bradford Royal Infirmary..... 75
Brentford Union Infirmary ..... 74
Brighton, Hove, and Preston Dispensary ..... 74
Bristol Royal Infirmary ..... 72
Bury Infirmary ..... 75
Carlisle Non-Provident Dispensary .. 74
Chelsea Hospital for Women ..... 76
Chelsea Infirmary ..... 76
Chesterfield and North Derbyshire Hospital ..... 74
Consumption Sanatoria, Bridge-of-Weir ..... 76
Cornwall Works Dispensary, Smethwick ..... 73
Cotes Hill Mental Hospital, Stafford. 75
Coventry and Warwickshire Hospital 75
Croydon Borough Hospital for Infectious Diseases ..... 73
Darlington Hospital and Dispensary.. 76
David Lewis Northern Hospital, Liverpool ..... 75
Devon County Asylum, Exminster .. 73
Dufferin Hospitals, Agra..... 72
Earlswood Asylum, Redhill ..... 76
Evelina Hospital for Sick Children .. 74
Glasgow Parish Council ..... 74
Gravesend Hospital, Kent..... 76
Highlands and Islands of Scotland .. 74
Horton Infirmary, Banbury ..... 75
Hospital for Sick Children ..... 75, 76
Huddersfield Royal Infirmary ..... 73
King Edward VII.'s Hospital, Cardiff. 75
King Edward VII. Sanatorium, Midhurst ..... 73
Lancashire Education Committee .... 75
Leper Asylum, Makogai Island, Fiji.. 75
Lincoln General Dispensary..... 76
Liverpool Royal Infirmary ..... 74
Macclesfield General Infirmary ..... 73
Middlesex Hospital Medical School.. 76
Miller General Hospital ..... 14
National Hospital for the Paralysed. 72
Notting and Lunnasing Parish Council..... 14
Newcastle-on-Tyne Dispensary ..... 75
Nottingham City Asylum ..... 76
Nottingham General Dispensary ..... 72
Nottingham Workhouse Infirmary .. 76
Parish of Rousay and Egilsay ..... 14
Preston Royal Infirmary ..... 74
Prince of Wales's General Hospital, Tottenham ..... 75
Queen Alexandra Sanatorium, Davos Platz..... 75
Rochdale Infirmary ..... 75
Royal London Ophthalmic Hospital .. 74
Royal Naval Medical Service ..... 72
Royal Southern Hospital, Liverpool. 75
Royal Surrey County Hospital, Guildford ..... 75

**APPOINTMENTS—(Continued).**
Royal Victoria and West Hants Hospital, Bournemouth ..... 76
St. John's Hospital of Manchester .. 75
St. Paul's Hospital for Skin, &c., Diseases, Red Lion-square..... 75
Scarborough Hospital and Dispensary 75
Stockport Infirmary ..... 75
Suffolk District Asylum, Melton..... 75
The Retreat, York ..... 73
Walsall and District Hospital ..... 74
Warwickshire County Council..... 72
Western General Dispensary, Marylebone-road ..... 75
West Kent General Hospital, Maidstone..... 74
West Loop Dispensary and Victoria Hospital ..... 75

**ASSISTANCIES, MEDICAL..... 76**

**ASYLUMS, HOMES, &c.—**
Ashwood House, Kingswinford .... 68
Association of Medical Men Receiving Resident Patients ..... 72
Barnsley Hall, Bromsgrove ..... 66
Barnwood House Hospital..... 67
Bishopstone House, Bedford..... 68
Brunton House, Lancaster..... 65
Buntingford House Retreat, Buntingford ..... 69
Camberwell House, Peckham-road.... 66
Capel Lodge Retreat, Folkestone .... 65
Cheadle Royal ..... 66
Clarence Lodge, Clapham-park ..... 67
Colchurst House, Warford..... 72
Coppice, The, Nottingham..... 67
Crookesbury Sanatorium, Surrey ..... 72
Cupola Nursing Home, Hayling Island ..... 72
Dadesi Nursing Home ..... 68
Dalrymple House, Rickmansworth ... 69
Dartmoor Sanatorium ..... 70
David Lewis Colony, Alderley Edge.. 66
Ghyllwoods ..... 69
Grove House, Ecclesh Sunderland ..... 67
Grove, The, Catton, Norwich ..... 67
Harris, Caterham Valley..... 72
Haydock Lodge, Newton-le-Willows.. 68
Heigham Hall, Norwich..... 66
Hendon Grove, Hendon ..... 68
Home for Epileptics, Maghull ..... 66
Inglewood Nursing Home, Denmark Hill ..... 72
Inverith Lodge Sanatorium, Colinsburgh ..... 69
Kingsdown House, Box ..... 68
Larkin, Grove Park ..... 72
London Fever Hospital ..... 67
Mailing Place, Kent ..... 67
Malvern Hydropathic ..... 69
Manna Mead, Blackheath ..... 65
Melbourne House, Leicester ..... 65
Meyrick, Brighton..... 72
Middleton Hall, Co. Durham ..... 69
Moat House, Tamworth ..... 67
Mount Pleasant, Wanstead ..... 72
Mount Vernon Sanatorium, Northwood ..... 70
Newmains Retreat, Lanarkshire .... 69
Nordrach-on-Dee, Banchory ..... 74
Northumberland House, Finsbury-park ..... 68
Northwoods House, Winterbourne .. 68

**ASYLUMS—(Continued.)**
Norwood Sanatorium, Ltd. ..... 69
No. 195, L.O., Strand..... 72
Osea Island, Heybridge ..... 69
Peckham House ..... 68
Pendyffryn Hall Sanatorium ..... 70
Pinewood Sanatorium..... 70
Plymston House, South Devon ..... 67
Portsmouth Corporation Mental Hos. 67
Rosbury Sanatorium, Northallerton.. 72
St. Andrew's Hospital, Northampton 67
St. Luke's Hospital for Mental Diseases ..... 68
Shaftesbury House, Formby-by-the-Sea..... 68
Springfield House Private Asylum, Bedford ..... 67
Stocker, Craven-street ..... 72
Stretton House, Church Stretton .... 67
The Grange, Rotherham ..... 67
Vale of Clwyd Sanatorium..... 70
Warneford Asylum, Oxford ..... 66
White Hall, South Norwood Hill .... 66
Wye House, Buxton ..... 67
Yarrow Convalescent Home, Broadstairs..... 68

**FINANCIAL, &c.—**
Equitable Reversionary Interest Soc. 65
London Mortgage Society..... 77

**HEALTH RESORTS, BATHS, &c.:—**
Aix-les-Bains, Savoy ..... Cover iii
Alexandra Therapeutic Institute .... 65
Cliffe Hydro, Ilfracombe ..... 65
Leysin, Switzerland..... 71
Peebles Hotel Hydropathic ..... 71
St. Moritz-Dorf..... 71
Smedley's, Matlock ..... 65

**HOTELS:—**
Eden Hotel ..... 71
Grand Hotel de Nice ..... 72
Hôtel National, Montreux..... 71
White Hart Hotel, Margate ..... 71

**HOUSE & ESTATE AGENTS:—**
Caretaker, Westbourne-grove..... 78
Clark & Son, New Cavendish street .. 78
Cockerell Bros., North End-road .... 78
Fairbrother, Manchester ..... 78
Ley Clark, Wimpole-street ..... 78

**LIFE & FIRE ASSURANCES:—**
Prudential ..... 63

**MASSAGE:—**
London School of Massage ..... 63
Swindon, Upper Baker street ..... 71

**MEDICAL ACCOUNTANTS, &c.—**
Turner ..... 78

**MEDICAL AGENTS:—**
Arnold & Sons, Giltspur-street ..... 80
Blundell & Rigby ..... 82
Friedmann, Limited ..... 80
Manchester Clerical, &c., Association. 82
Medical Agency ..... 82
Moore & Co. ..... 77
Needes, Herbert ..... 63
Needes, J. C. ..... 82
Peacock & Hadley ..... 82
Scholastic, Clerical, &c., Assoc..... 81
Turner ..... 79

**MEDICAL SCHOOLS:—**
(LONDON.)
London School of Clinical Medicine .. 81
West London Post-Graduate College.. 61

**NURSING INSTITUTES:—**
General Nursing Association ..... 65
Hospital for Sick Children, Great Ormond-street ..... 63
Leeds Trained Nurses' Institution.... 65
London Nurses' Association ..... 64
Male Nurses Temperance Co-operation 66
Mental Nurses Co-operation..... 65
National Hospital Male Nurses' Association ..... 63
Nurses' Co-operation, Portland-place. 64
Registered Nurses' Society ..... 65
St. John's House ..... 63
St. Luke's Hospital, S.C. ..... 61
Temperance Association of Male Nurses, Ltd. ..... 64
Temperance Male Nurses Co-operation 64
Temperance Male and Female Nurses Co-operation..... 64
The Retreat, York ..... 64

**OFFICIAL NOTICES:—**
Brompton Hospital for Consumption 62
City of London Lying-in Hospital .... 62
Federation of University Women .... 63
Hospital for Sick Children..... 62
King's College Hospital ..... 62
London Hospital ..... 62
London Post-Graduate Association .. 61
Medical Graduates' College, &c..... 61
North-East London Post-Graduate College ..... 62
Queen Charlotte's Lying-in Hospital. 62
Royal London Ophthalmic Hospital .. 62
Royal Society of Medicine .... Cover i
Royal Surgical Aid Society ..... 61
University of Durham ..... 65
West End Hospital for Diseases of Nervous System ..... 62
York-road General Lying-in Hospital, Lambeth ..... 62

**PARTNERSHIPS & PRACTICES:—**
Arnold & Sons, Giltspur-street ..... 77
Athertons, Ltd., Chancery-lane .... 77
Lee & Martin, Birmingham..... 78
Manchester Clerical, &c., Association ..... 78
Martland, Oldham..... 76
No. 150, L.O., Strand..... 78
No. 189, L.O., Strand..... 77
No. 140, L.O., Strand..... 77
No. 191, L.O., Strand..... 78
No. 196, L.O., Strand..... 78
No. 201, L.O., Strand..... 78
No. 1023, L.O., Strand ..... 78
Peacock & Hadley, Craven-street .... 78
Turner, Adam-street ..... 77

**RAILWAY & STEAMSHIP CO.'S:—**
New Zealand Shipping Co. ..... 65

**TUTORS & LECTURERS:—**
Beckton ..... 65
Falk, Whitips .. 65
Gemmell ..... 65
Med. Corres. Coll. ..... 63
No. 107, L.O. .. 65
No 443, L.O. .. 78
Patey..... 65
Scholastic ..... 6
Weymouth .... 81


*For Index to Trade and Miscellaneous Advertisements see page 4.*

# Hunterian Lecture

ON

# THE PATHS OF INFECTION IN GENITO-URINARY TUBERCULOSIS.

*Delivered before the Royal College of Surgeons of England on Feb. 3rd, 1913,*

BY K. MACFARLANE WALKER, F.R.C.S. ENG., M.A., M.B., B.C. CANTAB.

MR. PRESIDENT AND GENTLEMEN,—Of the honour which you have conferred upon me I am deeply sensible. I thank you not only for the privilege of being one of your Hunterian professors, but also for the pleasure that I feel in coming from the Argentine Republic to renew thus my associations with this College.

## INTRODUCTION.

In attempting to trace the paths along which a tuberculous infection of the urino-genital system advances I am aware that my general attitude has been that of the pathologist rather than that of the surgeon. For this I make no apology. The point of view and the method of investigation of the surgeon and of the pathologist may differ, but their conclusions, if of any value, should be found to be complementary and confirmatory. A correct knowledge of the enemy's movements is the first essential to a successful surgical campaign, and in attempting to extirpate disease by the removal of infected tissue it is of the utmost importance that the surgeon should realise the paths along which the disease is advancing.

The task of tracing the path of a tuberculous invasion is not an easy one. The bacillus of tubercle does not always indicate its presence in the tissue by the production of a tuberculous lesion. Structures may be shown under the microscope to be absolutely free from signs of tuberculosis, and yet nevertheless have furnished the path along which the tuberculous invasion has progressed. Continuity of infection is not synonymous with continuity of lesion. The presence of virulent tubercle bacilli in the tissues is not of itself sufficient to determine the development of a tuberculous lesion. Another factor is necessary. The soil must have been suitably prepared for the reception of the infective agent. In the absence of this the tubercle bacillus remains dormant or is destroyed. It is for this reason that the task of determining the paths taken by a tuberculous infection when it has gained an entrance into the body is of especial difficulty.

To treat tuberculosis of the testicle or of any other portion of the urino-genital tract as if it were a separate pathological entity would be entirely irrational. Tuberculosis of the testicle, in the great majority of cases, is but a single manifestation of a disease which is affecting the urino-genital tract at large. It indicates a development in a disease that has a tendency to become generalised. Consequently any separation of urino-genital tuberculosis into anatomical divisions is artificial, and merely for convenience sake. Tuberculosis of the testis being one of the commonest and most easily recognised manifestations of tuberculosis of the genito-urinary system, it is my intention to deal with it first.

## TUBERCULOSIS OF THE TESTIS.

Tubercle of the testis, like tubercle of any other part of the genito-urinary system, is almost always a secondary lesion. Other tuberculous foci almost invariably exist elsewhere in the body, most commonly in the lungs or in the lymphatic glands. Kocher's statistics show that in a series of 451 necropsies upon cases of urino-genital tuberculosis over 80 per cent. demonstrated pulmonary lesions. Küster further asserts that more exact methods of examination would show that urino-genital tuberculosis is *always* accompanied by lesions in other parts of the body. Whether this is true or not there can be little doubt that the disease in the urino-genital system is rarely the sole manifestation of tubercle in the body. The presence of these additional tuberculous lesions in other parts of the body has a double significance. It indicates a susceptibility of the body to tuberculous infection in general, and at the same time furnishes a source from which the infecting agent may be carried to the urino-genital system.



### *Ascending or Descending Path of Infection?*

Tubercle of the testis is therefore rarely the sole manifestation of tuberculosis in the body. Nor, in the lecturer's opinion, is it generally the primary lesion, even in the urino-genital tract. Speculation has been busy on the subject of the path of infection in tubercle of the testis. Various theories have at various times been put forward, but authorities are now, broadly speaking, divided into two camps. The first group comprises those who believe that in the majority of cases of genital tuberculosis the disease starts primarily in the testis, and from there *ascends* along the vas towards the prostate. The other group maintains, on the other hand, that the primary focus is almost invariably in the prostate, and that the testicle is involved only by a secondary *descending* extension along the cord. If the first, or ascending theory, is correct, the infecting agent—namely, the tubercle bacillus—must be carried to the testis by means of the blood stream. If, on the other hand, the primary focus in genital tuberculosis be in the prostate, it is to be presumed that when the testicle becomes subsequently implicated the path by which the bacillus reaches the testis is not the blood stream but the cord, as in the case of gonococcal infection.

According to one theory, therefore, the disease progresses along a path which ascends from the testis to the prostate. In the other it descends in the reverse direction from the prostate to the testicle. It is obvious that, if for no other purpose than that of discovering the best method of surgical treatment, the consideration of these two possibilities is of the highest importance.

The theory of an ascending infection is supported by Reclus, Senn, and Councilman. It is based on the belief that tubercle bacilli cannot descend the cord in a direction which is opposite to that of the secretions. The correctness or incorrectness of this view will afterwards be discussed, but in the meantime some light can be thrown on the subject by a consideration of the results of clinical examination. If the lesion in the testicle be the primary lesion in genital tuberculosis in early cases of the disease nothing abnormal should be found in the prostate. In what percentage of cases of genital tuberculosis, therefore, is the prostrate found to be normal? Enormous discrepancies exist in the answers given to this question by different observers, for the detection and interpretation of prostatic disease is of great difficulty.

The two extremes are represented by Salleron and Keyes. The former states that in 51 cases of tuberculous epididymitis that were examined by him the prostate and vesicles were affected in but a single instance. Keyes, on the other hand, maintains that in every case of tuberculous testicle which he has examined during the last 10 years he has been able to find some indication of a pathological condition of the prostate. My own observations are in accord with those of Keyes. In a series of 22 cases of tuberculous epididymitis examined with especial reference to this point an abnormal condition of the prostate or of the vesicles was discovered in 20 instances. Of the two exceptions, one was a baby of 15 months and the other a youth who had undergone bilateral castration at the age of 14, and gave no evidence to the examining finger of possessing any prostate or vesicles at all. I say an abnormal condition of the prostate designedly, for it must be admitted that the signs observed were merely those of prostatitis or vesiculitis, and not necessarily of tuberculosis. In some cases the prostatitis may have been caused by the irritating and purulent discharges coming from the testicle. In others it may have been the remains of an old antecedent gonococcal infection. Still, in a large percentage of cases the lesions of the prostate and vesicles were undoubtedly tuberculous.

This almost constant association of prostatitis with tuberculosis of the testis gives weight to the theory of a primary involvement of the prostate and a subsequent descending infection of the cord only when taken in conjunction with the clinical history of the case. On examining my patients carefully I was able to elicit in a great many instances a history of symptoms of prostatic irritation which preceded the appearance of the testicular lesion. Such symptoms

included pain or frequency in micturition, the appearance of a urethral discharge with no venereal history, the passage of blood, or the occurrence of painful or blood-stained ejaculations. The not infrequent occurrence of these symptoms prior to the appearance of a tuberculous epididymitis has been commented upon by various authors. Reclus has drawn attention to their commonness, and has termed them premonitory symptoms.

The above conclusions with regard to the almost invariable association of tuberculosis of the testicle with lesions in the prostate are amply supported by evidence obtained from the post-mortem room. It must be confessed that an undoubted objection exists in connexion with observations derived from such a source. The cases of genital tuberculosis that are seen on the post-mortem table are rarely early ones. By the time it has proved fatal to the patient the disease, even although it originally started in the testicle, may well have spread to the prostate. Nevertheless, some indication of the true sequence of events in these cases may be obtained by a careful consideration of the appearance and apparent age of the lesions in the prostate and in the testicle. Reclus, who is in favour of a primary disease in the testicle, was forced to admit that the nodules found post mortem in the prostate appeared to be at least of equal age to those in the epididymis. In all the pathological specimens which the lecturer has had the opportunity of examining the appearances were such as to suggest that the tuberculous deposits in the prostate were more mature than those in the epididymis. In some cases the prostatic disease had become so advanced that the prostate was little more than a shell enclosing a tuberculous abscess, whereas the testicular lesion had merely reached the stage of caseation.

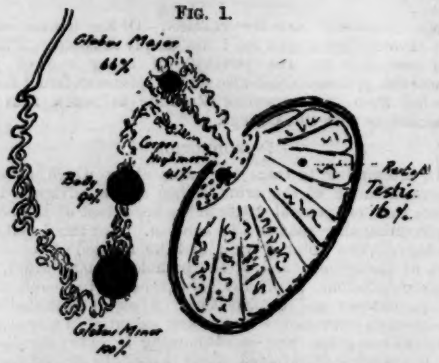
### *Situation of the Earliest Deposits in the Testicle.*

That tubercle attacks the epididymis before it invades the body of the testis is a time-honoured observation. The primary involvement of the epididymis in tuberculosis is one of the most strikingly constant features in the whole of pathology. Reclus states that in all his experience he has never come across an instance in which the body of the testis has been tuberculous whilst the epididymis has remained healthy. Literature contains very few infringements of this rule, and the only four examples which I have been able to collect are the cases published by Dufour, Langlet, Schmidt, and Barling, in addition to one in my own series.

The factors that determine this almost constant infection of the epididymis prior to that of the body of the testis must be of no uncertain nature to allow of so few exceptions. Yet how, if we accept the view of primary infection of the testicle by the blood stream, are we to explain the clinical fact? It has been suggested that it is due to the tortuosity and smaller calibre of the blood-vessels of the epididymis. The tubercle bacilli in the blood are supposed to pass through the capillaries of the testis, but to be detained in the more tortuous blood-vessels of the epididymis. Another explanation offered is that the resistance of the epididymis has been frequently impaired through previous infections. The latter explanation is more plausible, but both appear to me to be pitiably inadequate to account for so constant a feature as the involvement of the epididymis before the testis.

Anatomical peculiarities in the arrangement of its blood-vessels are not the monopoly of the testis, yet in no other organs of the body is the site of the primary tuberculous deposit so constant as it is in the case of the testicle. Nor can I satisfy myself that this tortuosity of the blood-vessels of the epididymis even exists. If, however, we accept the hypothesis that the infective agent has reached the testicle, not by the blood stream, but by travelling down the cord, we have an immediate and satisfactory explanation of the fact that the epididymis is infected previously to the body of the testicle. The epididymis is the first outpost gained by the invasion descending the cord. Moreover, further evidence in favour of this may be obtained from a consideration of the part of the epididymis in which the earliest deposits of tubercle take place. The statement that appears in many text-books to the effect that the earliest signs of tubercle appear in the upper pole of the epididymis is, in the lecturer's opinion, absolutely incorrect. Clinical observations and pathological examinations both point to the earliest deposits being in the lower pole of the kidney. Exceptionally favourable facilities for determining this point have been afforded to me by the routine and weekly examination of a large number of cases of tuberculosis of the testicle which became bilateral while actually under observation. In every one of my cases the first signs of disease were detected in the lower pole of the epididymis. This was true equally of the first or of the second testicle to become infected. Confirmatory evidence of this is obtained from the examination of pathological specimens. The incidence of tuberculous deposits in the testicle is shown graphically in Fig. 1. Moreover, it is at the lower pole that the first signs of softening and breaking down are observed, the deposits at this spot being manifestly the oldest. That the lower pole of the epididymis should be the commonest site

FIG. 1.




Diagrammatic representation of commonest sites of tuberculous deposits in the testicle, compiled from a series of tuberculous testicles removed by operation. The figures represent the percentage of cases which showed tuberculous deposits in that position. The size of the circles give an approximation of the frequency with which tuberculous deposits are found in these sites.

of the primary deposits is only to be expected if the tuberculous infection is a descending one. It is the first spot to be reached by the infective agent in its journey down the cord.

In discussing the path of infection in the case of tuberculous disease of the testicle it is helpful to consider the analogous conditions found in acute infections of the same organ. I would ask you to consider first the case of a metastatic orchitis occurring in the course of mumps, pyæmia, variola, scarlet fever, or typhoid. In these cases of metastatic orchitis the infecting organism is known to be carried by the blood. Ziegler has termed them "hæmatogenous" as an expression of their origin. The point of importance lies in the fact that in these cases of blood infection it is the body of the testis and not the epididymis which is chiefly affected. Contrast now these metastatic infections with those that occur in the course of a gonococcal urethritis. In the latter case the infective agent has undoubtedly travelled down the cord, and not by the blood stream. In this instance it is the epididymis that is the first portion of the testicle to be affected. Here, then, we have an indication to guide us in deciding whether an infection of the testicle is hæmatogenous, or whether it has descended along the cord. If the earliest signs of disease appear in the testis proper, the infection is probably by the blood, whereas if it is the epididymis that is first affected the infective agent has probably reached it by the cord. Granted the truth of this maxim, we are furnished with a powerful argument in favour of the descending theory of tuberculosis of the testicle. A tuberculous testicle falls into the same category as a gonococcal one, and if we are prepared to admit a descending infection in the case of the gonococcus we cannot rationally deny it in the case of the bacillus of tubercle.

### *Experimental Evidence.*

In the face of this evidence, what has engendered the strong opposition that has been brought to bear on the subject of descending tuberculous infections of the testicle? Probably two considerations have been responsible: firstly, the belief that organisms could not descend the cord against

the current of its secretions; and secondly, Baumgartner's failure to produce experimentally a descending tuberculosis by injecting tubercle bacilli into the urethra of a rabbit. With the idea of testing the power of organisms to travel from the urethra to the testicle against the current of the secretions, and in the hope of gaining some indication of the path that they followed, I undertook a series of experiments on animals. Following on the lines of Paladino Blandini I inoculated the anterior urethræ of a series of guinea-pigs with a loopful of some definite organism, and after an interval of 12 hours made a careful bacteriological examination of various portions of the genito-urinary tract. For the first four experiments B. prodigiosus was chosen as its characteristic pigment allowed of its easy recognition. A loopful was placed in the anterior urethra, and the guinea-pig killed at the end of 12 hours. In three out of the four cases an abundant growth was obtained from the epididymis, and a much scantier one from the testis. The same organisms were also found in the vesicles and in the plexus of lymphatics running with the vas. A control cultivation of the blood gave a negative result.

These experiments were repeated with other organisms, such as staphylococcus aureus and the diphtheroids. Similar results were obtained. Organisms which had been placed in the urethra were obtained from the epididymis at the end of eight hours. Microscopic sections of the tissues in these cases showed the presence of numerous organisms in the lymphatics surrounding the vas. In the lumen of the vas itself few or no organisms were found. The appearance was such as to suggest that the organisms reached the testicle by means of the lymphatics, and not by the lumen of the vas, as Paladino Blandini supposed.

The difficulties of tracing tubercle bacilli after they have been inoculated into the urethra are very much greater. Cultural methods are here almost impossible, and but little multiplication of the bacillus occurs to assist the searcher in his hunt. The examination of the tissues of the epididymis or cord is a tedious one and open to error. My own results when using tubercle bacilli were very unconvincing, for in only one out of five cases was I able to find unmistakable tubercle bacilli in the testicle after inoculation of the urethra. Paladino Blandini, on the other hand, succeeded in demonstrating tubercle bacilli in the epididymis 30 hours after urethral inoculation in every one of his ten experiments. Moreover, Delli Santi was able to recover virulent tubercle bacilli from the testicle of a dog a few hours after having injected them into the ureter. Although virulent, the bacilli had produced no tuberculous reaction in the testicle. In spite, therefore, of this failure on my part to obtain an independent and convincing proof of the accuracy of Blandini's results, I believe that what is true of pyogenic organisms is also true of the organism of tuberculosis, and that tubercle bacilli may reach the epididymis by descending the vas or its surrounding plexus of lymphatics. My own experiments led me to believe that not only all varieties of micro-organisms, but also inanimate granules of carmine or iron are absorbed from the urethra and carried by the lymphatics to the testicle.

Baumgartner's failure to produce a descending tuberculosis experimentally in rabbits is, in my opinion, no proof of any inability on the part of the tubercle bacillus to descend the cord in a direction contrary to the secretions. Rather is it a demonstration of the truth of the fact that the mere presence of tubercle bacillus in a tissue is of itself not sufficient to determine a tuberculous process. In the absence of a suitable soil the bacilli are destroyed by the healthy tissues. The inoculation, then, of the urethra or even of the cord is insufficient; it is necessary also to prepare the testicle for the reception of the bacillus by previously injuring it. This is a specimen of the urino-genital system of a rabbit whose urethra I inoculated with a loopful of tubercle bacilli. The day preceding the inoculation I exposed the left testicle of the rabbit and subjected it to a certain amount of trauma. Three days after the inoculation a hydrocele appeared on the same side, and the testicle became swollen, tender, and inflamed. At the end of six weeks the rabbit had lost flesh and displayed a tuberculous urethritis, together with a swollen, indurated epididymis on the injured side. The post-mortem examination showed a distribution of the tuberculous lesions exactly similar to that which is usually found in the human subject. The epididymis was the seat of a well-developed tuberculosis, which had also attacked the seminal vesicle on the same side. The testicular and prostatic extremities of the cord were considerably enlarged, the intervening portion appearing but very slightly thickened. The opposite testicle was natural. Microscopic examination confirmed the above. Sections stained by the Ziehl Neilsen method showed the presence of numerous tubercle bacilli in the epididymis and their absence in the body of the testis. Although the experiment supplied a valuable corroboration to the theory of a descending tuberculosis, it failed in one very important respect. The discovery of four or five miliary tubercles on the peritoneum showed that the tuberculosis was on the point of becoming generalised, and that the necropsy had been performed too late to eliminate the possibility of infection of the testicle through the blood stream. However, the advanced stage reached by the tuberculous epididymitis compared with the meagre and youthful signs of generalisation renders this improbable.

### *The Distribution of the Tuberculous Tissues.*

The possibility of the lymphatics of the cord acting as the path along which a descending infection of the testicle may advance is supported to some extent by the appearance of specimens obtained from the post-mortem room.

Fig. 2 is a typical example of the condition of the cord that is found in a case of genital tuberculosis. The prostatic and the testicular extremities of the cord are markedly affected, whilst the intervening portion appears healthy. If transverse sections be made and examined microscopically the following is found to be the exact distribution of the tuberculous lesions. Transverse sections of the prostatic extremity show that the vas itself is comparatively healthy, but that it is surrounded by a thick shell of tuberculous tissue, due to infiltration of the lymphatics. As the testis is approached this lymphatic infiltration gradually ceases. A section of the distal end of the vas near its termination in the epididymis shows a converse condition. Here the disease has affected the mucosa of the vas, whereas the surrounding lymphatics give little or no evidence of any lesion. The condition of affairs is represented in the diagram (Fig. 2), the tuberculous lesions being darkly shaded. This distribution suggests that the disease is disseminated from the prostate by the lymphatics, and that having encountered in the epididymis a suitable soil in which to flourish, it produces a returning wave of infection in the vas, through the agency of the secretions. It is interesting to note that the microscopic examination of the genital tuberculosis experimentally produced in the rabbit by urethral inoculation showed an exactly similar distribution. The prostatic extremity of the vas and the seminal vesicle on the diseased side were enclosed in a dense shell of tuberculous infiltration, the inner coat of the vas being healthy. At the distal end of the vas the parts most affected were not the outer coats and the lymphatics but the innermost coats. The further the distance from the epididymis, the

FIG. 2.

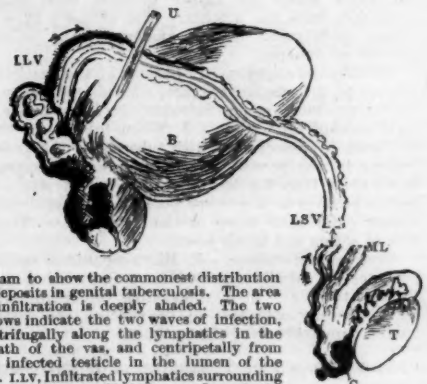



Diagram to show the commonest distribution of deposits in genital tuberculosis. The area of infiltration is deeply shaded. The two arrows indicate the two waves of infection, centrifugally along the lymphatics in the sheath of the vas, and centripetally from the infected testicle in the lumen of the vas. LLV, Infiltrated lymphatics surrounding vas. U, Ureter. B, Bladder. LSV, Lymphatics running in the sheath of the vas, and forming a connexion between the lymphatics of the testicle and the prostate. ML, Main lymphatics of the cord running to lumbar glands. C, Caseous deposit in lower pole of epididymus. T, Testis.

more completely were the inflammatory changes restricted to the mucosa.

Apart, therefore, from other considerations, the distribution of the tuberculous tissues alone suggests the existence in these cases of two opposing waves of infection, a centrifugal and primary one, travelling from the prostate along the lymphatics; a centripetal and secondary one, in the lumen of the vas, due to the flow of infected secretions from the diseased epididymis.

*Summary.*

From a consideration of the above it would appear that infection of the testicle takes place in tuberculosis, as in gonorrhœa, by means of the cord and not by the blood stream. That cases of hæmatogenous infection occur cannot be denied, but they are few in number. The evidence in favour of the frequent occurrence of a descending genital tuberculosis may be tabulated as follows:—

*Clinical evidence.*—1. It is extremely rare to find tubercle of the epididymis without discovering some indication of disease of the prostate or the vesicles. 2. Prostatic tubercle is not infrequently found without any lesion of the testicle. 3. The appearance of a tuberculous epididymitis is often preceded by symptoms of prostatitis or vesiculitis—the so-called prodromata of tuberculous epididymitis. 4. The earliest signs of tuberculous disease are found at the lower pole of the epididymis. This is the first position which opposes the line of march of the invading organisms. 5. Tuberculous disease of the testicle is analogous to acute infections which are known to have been produced by extension from the urethra. The ordinary type of tuberculous epididymitis has no analogy to the hæmatogenous orchitis of mumps.

*Pathological evidence.*—1. Lesions of the testicle without disease of the prostate are rare, whereas tuberculous lesions of the prostate are not infrequently found unaccompanied by disease of the testicle. 2. When tubercle of the testicle is found in association with tubercle of the prostate, the lesions in the prostate generally have the appearance of being older than the lesions in the epididymis. 3. Tuberculous nodules in the lower pole of the epididymis usually appear older than those in the upper pole. They are the first to soften and break down.

*Experimental evidence.*—1. Micro-organisms and inanimate granules are rapidly absorbed from the urethra and carried to the testicle. 2. A tuberculous epididymitis may be experimentally obtained by inoculating the urethra after having damaged one of the testicles.

THE ETIOLOGY OF TUBERCULOSIS OF THE PROSTATE.

As a result of the foregoing conclusions it would seem that the prostate, with its surrounding network of lymphatics, plays an extremely important rôle in the development of tuberculosis of the testicle. It is the gateway to tuberculous infections of the testicle, just as it is the gateway to gonococcal and pyogenic infections. If this is so, one would expect to find that tuberculous lesions of the prostate are extremely common. Post-mortem statistics show that such is the case, and that in chronic urino-genital tuberculosis the prostate is the organ which least frequently escapes.

On what does this frequent affection of the prostate depend, and what are the paths by which it is infected? In the case of the prostate four possibilities present themselves for consideration: (1) Infection by the blood stream; (2) extension of the disease by continuity of structure; (3) direct infection per urethram; and (4) infection through the agency of the urine.

It is probable that examples of all of these modes of infection are to be met with. A primary tuberculous prostatitis due to infection by the blood undoubtedly occurs. So also does tubercle of the prostate due to an extension from neighbouring structures, such as the bladder or the peritoneum. Less common and less certain is direct infection by the urethra. Still, the possibility of infection after coitus must be considered. Deville undertook an investigation of the vaginal discharges in genital tuberculosis amongst women. In four out of the eight cases examined he was able to demonstrate tubercle bacilli in the discharges. On examining the husbands of these cases he found that all were suffering from tuberculous epididymitis. Infection per urethram during coitus is therefore probable, although it is certain that infection of the female by the male is more frequent than infection of the male by the female.

*Infection of the Prostate by the Urine.*

It is, however, upon the importance of the urine as a vehicle of infection that I wish to lay especial emphasis. The urine is, in the lecturer's opinion, a far more frequent agent of infection to the prostate than is the blood. The presence of a small tuberculous focus in the upper portion of the arbor urinæ is sufficient to ensure the presence of tubercle bacilli in the urine and the possibility of prostatic infection by this agency. A very large number of cases of tuberculosis of the prostate are secondary to lesions in one of the kidneys. Sometimes the prostate is infected and the bladder escapes.

Anatomical considerations render the prostate particularly liable to infection from any infective agent that may be carried to it by the urine. A medial section through the body shows that the bladder and prostate together form an excellent segregating apparatus. Any deposit in the urine would naturally tend to collect in the lowermost part, formed in the upright position by the prostate. Infective material may consequently be brought into contact with the prostatic urethra for a considerable length of time. Given any condition of lowered resistance in the tissues, such, for example, as a previous inflammation, the chance of infection would be great. Moreover, in the prostatic urethra are natural crypts and ducts in which tubercle bacilli may easily become lodged, and thus escape the fate of being swept down the urethra during the act of micturition.

Having seen, therefore, that the prostate is particularly susceptible to urine infection, it remains only to discuss the conditions under which tubercle bacilli are found in the urine.

*Bacilluria due to a Tuberculous Focus in the Kidney.*

The presence of tubercle bacilli in the urine secreted by one of the kidneys is generally an indication of renal tuberculosis. In a very large number of cases of tuberculous disease of the prostate a primary focus exists in one of the two kidneys, and is the *fons et origo* both of the bacilluria and of the prostatic trouble. In some cases the primary lesion in the kidneys may be so insignificant that it is impossible to detect it by clinical means. Post-mortem statistics show the frequency with which tuberculosis of the lower urinary passages is associated with an undiagnosed focus in the kidney. Nor are these cases always revealed by a post-mortem examination. It is only after a careful microscopic examination of the kidneys that we can with any certainty state that they are free from suspicion. The microscope will occasionally reveal a tuberculous nodule in what appeared to the naked eye a perfectly healthy organ.

Yet in spite of this a certain number of cases of prostatic and vesical tubercle occur in which a careful investigation of the kidney fails to discover the changes that are commonly regarded as characteristic of tuberculous processes. By what means, in such cases, may tubercle bacilli gain an entry into the urine? This question of the infection of the prostate by the urine in the absence of any renal tuberculosis requires careful consideration.

*Infection by the Urine in the Absence of a Typical Renal Tuberculosis.*

The question of the elimination of bacteria by the healthy kidney has provoked much discussion. Bield, Krauss, and Pawlowsky held, and attempted to prove experimentally, that this excretory action exists The investigations of Wysskovitch, Spelz, Carl, and in particular those of Metier, have shown, however, that in all probability healthy renal tissue is impermeable to organisms. In the face of this and of other experimental evidence any theory which presupposes the secretion of tubercle bacilli by the healthy kidney must be abandoned. If tubercle bacilli are demonstrated in the urine coming from a kidney it may be assumed that that kidney is in an *unhealthy* condition. There are two facts, however, in connexion with this that are of the utmost importance. Firstly, it must be remembered that the amount of damage which a kidney must undergo in order to render it permeable to organisms is extremely slight. Secondly, it must be borne in mind that a great many varieties of atypical tuberculosis of the kidney undoubtedly occur, so that a kidney which at first sight may appear to be free of tuberculosis may actually be acting as a focus from which tubercle

bacilli are constantly passing into the urine. The subject, therefore, of the rôle played by the kidney as a factor in tuberculous infections of the lower portions of the urino-genital tract is one which requires very careful consideration.

It will be necessary to investigate the pathology of atypical tuberculosis of the kidney, and to define the relationship which exists between an atypical renal tuberculosis and tuberculous lesions occurring elsewhere in the body. If it should be found, for example, that phthisis is commonly associated with an unhealthy condition of the kidney we shall have at the same time established the probability that infection through the urine is frequent in such cases, for the existence of an unhealthy kidney is the prime factor in the production of a bacilluria.

The first question therefore that demands attention is the following:

*Is a damaged condition of the kidney commoner in tuberculous than in non-tuberculous patients?*

The question is best answered by an examination of post-mortem records. Le Novi has published the results of a series of necropsies upon phthisical subjects. He states that some form of nephritis was found in 50 per cent. of such cases, and that the frequency of association increased with the age and with the state of advancement of the pulmonary disease. The renal lesions were both macroscopically and microscopically unlike those of tubercle. Sometimes the kidneys resembled the kidneys of a chronic interstitial nephritis, and were small and fibrous. In other cases the kidney appeared enlarged, and the disease involved the epithelial elements. In yet a third variety, according to Salomon, microscopic examination revealed a diffuse epithelioid proliferation, accompanied by an infiltration of leucocytes. Other conditions are described. So varied are these that Tilden Brown has recognised seven different types of kidney lesion which may be found in association with phthisis.

It is still a little uncertain whether these lesions are due to the action of toxins or to the direct action of the tubercle bacillus itself. Leon, Bernard, and Salomon claim to have experimentally produced similar lesions by the injection of ethereal extracts of tubercle bacilli. Tournet, however, has demonstrated tubercle bacilli in the tubules of the diseased kidneys, and considers the lesion to be an atypical tuberculosis. Rebathe and Callivardin have also drawn attention to these anomalous forms of tuberculosis, and describe cases of nephritis which, clinically as well as pathologically, presented the picture of an ordinary chronic nephritis, and yet were shown to be tuberculous. Keersmaecker has gone so far as to assert that the presence of the bacillus of Koch must always be suspected in a case of chronic inflammation that evolves towards sclerosis and is of doubtful etiology. All agree that an abnormal condition of the kidneys is extremely common in tuberculous subjects, and it is the existence of this abnormal condition rather than its etiology that is of importance in the present discussion. The importance lies in the fact that *whenever there exists a tuberculous focus in the body there also exists the probability of an abnormal permeability of the kidney, and the occurrence of bacilluria.*

The foregoing conclusion has been arrived at from data of a pathological nature. It receives support, however, from independent observations derived from a clinical source. Foulerton and Hillier carried out a careful examination of the urine of patients dying from phthisis. In a series of cases which afterwards came to the post-mortem table tubercle bacilli were found in the urine six times. In five of these albumin was found as well as tubercle bacilli. At the necropsy no trace of tuberculosis of the urinary tract could be discovered. From these observations two important deductions may be made: firstly, that there would appear to be some connexion between the presence in the urine of albumin and the presence of tubercle bacilli; and, secondly, that in phthisical cases tubercle bacilli are excreted in the urine. The common factor that determines the bacilluria and the albuminuria is clearly the abnormal permeability of the kidneys.

By a process of reasoning based on clinical evidence we have arrived at the same conclusion at which we had arrived from pathological data. We have discovered that even in the absence of any typical renal tuberculosis the urine may still be the agent by which infection reaches the prostate. We have also gained an insight into the significance of albuminuria in a patient suffering from tuberculosis in any part of the body.

### *The Significance of Albuminuria in Cases of Urino-genital Tuberculosis.*

The routine examination of the urine in cases of genital tuberculosis has convinced me that in a great number of cases of genital tuberculosis a slight degree of albuminuria exists. In several of my cases this abnormal permeability of the kidney was found to have been a precursor of the development of the genital tuberculosis. In two patients that have been under my observation the albuminuria preceded the tuberculous lesions by five years. Insufficient as my observations have been, they would induce me to look upon any phthisical patient with albuminuria as a person fully equipped for the development of genital tuberculosis. The appearance of a nodule in the epididymis or the prostate would seem a very natural sequel to such a condition, and would direct my attention to the urine as the vehicle of infection rather than to the blood.

Hitherto our attention has been centred upon descending infections. In the first part of the lecture it has been pointed out that the prostate plays an important part in the localisation and in the spread of tuberculosis to the epididymis. Subsequently we have discussed the paths by which tubercle bacilli may reach the prostate. Emphasis has been laid upon the urine as a vehicle of infection, and it has been shown how it may act as such even in the absence of any tuberculous lesion of the kidney. It now remains only to discuss the question of ascending infections spreading from the prostate or the bladder to the kidneys.

### ASCENDING INFECTIONS.

In spite of the frequency of bilateral renal tuberculosis, the possibility of a tuberculosis that ascends from the prostate or bladder to the kidney against the urinary current has at various times been questioned. It has been held by some that in bilateral cases the path of infection for both kidneys is the blood stream, the conditions that favoured the development of tuberculosis in one kidney playing a similar rôle in the case of the second kidney. In 1892 Professor Albarran published the results of his experimental investigations upon the subject. He asserted that an ascending tuberculous infection of the kidneys is only possible if there be an accompanying retention, and that organisms are unable to ascend the ureters in the face of an opposing current of urine. The experiments of Hamen and Wildbolz appeared to confirm the above conclusions, and laid equal stress on the part played by retention in the production of all ascending infections.

The importance of these experimental results in the elucidation of clinical problems is supreme. The acceptance of the maxim that some degree of retention is a *sine quâ non* of ascending infections would considerably reduce the probability of the spread of tuberculosis from the bladder to the kidney. Pyogenic infections of the urinary tract are with great frequency accompanied by some degree of retention, but in the case of tuberculosis obstruction of the urinary flow is exceptional. The number of cases of tuberculosis of the bladder or prostate in which there is mechanical interference with the passage of urine is small, and if a stagnant column of urine in the ureter is necessary in order that the tubercle may spread upwards to the kidney this mode of infection must be correspondingly infrequent. That infective agents in the bladder reached the kidney by ascending the lumen of the ureter gained confirmation from Mr. C. T. Bond's experiments upon a case of urinary fistula. By injecting indigo granules into the bladder of his patient and afterwards recovering them from the fistulous opening in the lumbar region he was able to demonstrate the existence of an ascending mucus current in the ureter.

### *Experimental Evidence.*

With a view to obtaining further information on the subject of ascending urinary infections in general, and the path by which organisms from the bladder may reach the kidney, the lecturer undertook a series of inoculation experiments on animals. The experiments were of the same nature as those previously made by Professor Paladino Blandini. By their means I was able to satisfy myself that organisms from the urethra can actually reach the kidney

without the existence of any obstruction of the urinary flow. Further, I was enabled to gain some indication of the path along which they travelled.

The experiments consisted in inoculating the anterior urethra of a series of guinea-pigs with an easily recognisable organism like bacillus prodigiosus, and of afterwards hunting for the organisms in different portions of the arbor urinæ The animal was killed usually at the end of 12 hours, and cultivations were taken from various parts of the urinary tract. The bacteriological examination of the tissues was done with extreme precautions in order to exclude the possibility of infection during the post-mortem. The results obtained were striking in the extreme. In every case I succeeded in obtaining an abundant growth of organisms from the upper extremity of the ureter at the end of 12 hours. The possibility of a blood infection was guarded against by blood cultures that in every case proved sterile. The urine was also found to be sterile. The results of the experiments are given below :—

*Guinea-pig A.*—Anterior urethra inoculated with B. prodigiosus. Killed in 12 hours after inoculation. Heart's blood: Sterile. Urine: Sterile. Cultures from upper end of ureter: Abundant growth. Cultures from kidney (stripped of capsule): Sterile.

*Guinea-pig B.*—Anterior urethra inoculated with B. prodigiosus. Killed 13 hours after inoculation. Heart's blood: Sterile. Urine: Sterile. Upper end of ureter: Growth. Kidney (stripped of capsule): Sterile.

*Guinea-pig C.*—Urethra inoculated with B. prodigiosus. Killed after 13 hours. Heart's blood: Sterile. Urine: Sterile. Upper end of ureter: Growth. Kidney (stripped of capsule): Sterile.

*Guinea-pig D.*—Urethra inoculated with B. prodigiosus. Killed after 14 hours. Heart's blood: Sterile. Urine: Sterile. Upper end of ureter: Growth. Kidney (stripped of capsule): Sterile.

The results of the four experiments were absolutely consistent. In every case organisms were obtained 12 hours after urethral inoculation from the upper extremities of the ureters, but not from the kidney itself. The urine and heart's blood were always sterile. The next step in the investigation lay in discovering the path along which the organisms travelled in their journey from the urethra to the upper end of the ureter.

### *Path taken by Organisms from Urethra to Upper End of Ureter.*

An attempt was made to answer the question by substituting organic particles for living organisms, and inoculating the urethra with carmine granules or with finely powdered ferrous carbonate. Numerous sections of the tissues were afterwards prepared and searched for particles. In the case of the ferrous carbonate the sections were treated with ferrocyanide and hydrochloric acid in order to render the iron visible. The results of these experiments were such as to favour the idea that the particles travelled to the upper extremity of the ureter by way of the surrounding plexus of lymphatics. Moreover, an unexpected and suggestive disposition of granules was discovered in the kidneys. Although no trace of iron could be found in the substance of the kidney unmistakable granules were seen lying in the capsule.

To throw further light on the idea that organisms travelled, not by the lumen of the ureter, but in the plexus of lymphatics that surrounds that channel, further experiments were undertaken. The ureter of a guinea-pig was exposed on one side, close to the bladder, and was ligatured after careful separation from its surrounding lymphatics. The anterior urethra was then inoculated in the usual way, and the animal killed at the end of 12 hours. It was found that ligature of the ureter without interference with the surrounding lymphatics had not prevented the organisms from reaching the upper end of the ureter. Moreover, a hint was taken from the results of the experiments with iron granules, and in testing the kidney for organisms it was removed enclosed in its capsule. In the previous experiments the kidney had always been stripped of its capsule before bacteriological examination. As a result of this modification a positive result was obtained. Growths were obtained from both kidneys, although the colonies were slightly less numerous on the ligatured side.

Owing to the difficulty of recognising B. prodigiosus in sections of the tissues, it was decided to repeat the experiment with organisms which were Gram-positive and therefore more easily stained. Accordingly the urethra of a guinea-pig was inoculated with three or four loopfuls of a mixture of staphylococcus aureus and of a diphtheroid bacillus. The animal was killed 13 hours afterwards, and transverse sections of the ureters and the surrounding lymphatics were prepared. The sections showed that the lymphatics outside the ureter were crowded with Gram-positive cocci and bacilli. There could be no doubt about the identity of the organisms and those previously placed in the urethra. No organisms could be seen in the lumen or walls of the ureter itself.

Specially interesting were the results obtained from a microscopic examination of the kidney. Radial sections were cut and stained for organisms. A large number of Gram-positive cocci and bacilli were found in the lymphatics of the capsule. Very few organisms were found in the substance of the kidney, and it was obvious that the few that were discovered in this situation had made their way hither by travelling along the planes of connective tissue which ran into the parenchyma of the kidney from the capsule.

The first situation, therefore, in the kidney in which organisms appear in ascending infection is the capsule. In order to confirm these unexpected results obtained from experimental inoculation I have examined bacteriologically the ureters and kidneys from cases of ascending nephritis. A proof of the correctness of the above deductions was obtained. In the ureter itself few organisms could be seen, but the surrounding lymphatics were generally found to be crowded with bacteria. The same distribution of organisms was found to exist in the kidney. Moreover, in cases of very early infection of the kidney a marked round-celled infiltration was found just subjacent to the fibrous capsule. From there invading lines of infiltration were seen running along the fibrous planes into the substance of the kidney. The distribution of organisms and the appearance of the round-celled infiltration both suggested that in, at any rate, some cases of ascending infection the organisms reach the kidney, not by the lumen of the ureter and the pelvis, but by the peri-ureteral lymphatics and the capsule. In such cases the pelvis would merely be secondarily implicated during the excretion of organisms into the urine.

The difficulties of tracing the path taken by a loopful of tubercle bacilli placed in the urethra are incomparably greater than those experienced in dealing with B. prodigiosus or pyogenic organisms. Cultural methods are impossible, and the investigation resolves itself into a laborious search for tubercle bacilli in the tissues. In spite of these difficulties Paladino Blandini obtained positive results in all of his ten experiments, proving that tubercle bacilli, like other organisms, are carried in a few hours from the urethra to the kidneys. My own results are less conclusive than the foregoing, for in only one out of five guinea-pigs inoculated have I been able to demonstrate undoubted tubercle bacilli lying in the lymphatics surrounding the upper portion of the ureter. Yet, in spite of the inconclusive nature of these results, there still remains a mass of evidence to indicate that an ascending tuberculosis may occur in the absence of urinary retention, and that the connecting link in such cases is the plexus of lymphatics surrounding the ureter. If inorganic particles and pyogenic organisms are carried by the lymphatic stream to the upper reaches of the ureter and the capsule of the kidney, it would be illogical to doubt that the same is true of tubercle bacilli.

There has ever existed a tendency to draw distinctions between pyogenic infections and tuberculous infections that do not exist. As has already been shown, tuberculous infections of the testicle are entirely comparable to pyogenic infections, and the path taken by the infective agent is probably the same in both cases. So, in the lecturer's humble opinion, may it be with ascending infections of the kidney. The characteristics which the tubercle bacillus exhibits are not fundamentally different from those of other bacilli. What is true of pyogenic infections is in the main true of tuberculous infections, and we shall not be incurring risks if we assume that the path of infection is essentially the same in the two cases.

The subject of the paths of infection in urino-genital tuberculosis is too vast to confine within the limits of a single lecture. All that I have attempted to do has been to emphasise a few points that appear to me to have escaped due recognition, and to offer a solution to some of the difficulties that have gathered round the subject.

*Note.*—Various diagrams were used at the lecture which it has not been found necessary to reproduce.

# APPENDICITIS: A PLEA FOR IMMEDIATE OPERATION.[1]

BY EDMUND OWEN, F.R.C.S. ENG.,
SURGEON TO THE FRENCH HOSPITAL, LONDON.

IF we look around the circle of our personal friends and acquaintances, say of the last 20 years, we can scarcely fail to realise the fact that several have dropped out as the result of blood-poisoning started by disease of the appendix; certainly several colleagues and friends of my own have thus needlessly perished. Indeed, medical men, who, in my opinion, ought to enjoy an exemption from all disease, have paid a heavy toll to appendicitis. Not a few have been rescued by prompt operation, but too many have not accepted for themselves that definite line of treatment which, in like circumstances, they would unhesitatingly recommend to those for whose health they were responsible. But, unfortunately, medical men make, as a rule, bad patients—bad in this sense, that they do not readily hand themselves over, bodily and entirely, to their *confrères*, and bad also in that the *confrère*, when he has undertaken entire charge, is apt to hesitate to insist upon an extreme measure lest his views should fail to meet with full acceptance of his medical friend. The adjective which I have applied to some such deaths as "unnecessary" would not so readily be applied to a death from typhoid fever, cancer of the liver, or pneumonia, for instance, but it was *unnecessary* in that if only an early operation had been resorted to no calamity would have taken place. In Surgery, as in affairs of the State, what is to be desired is the greatest good for the greatest number; and if we could have back amongst us those friends whom uncontrolled appendicular disease has taken away, and could start treatment afresh, and begin it by early removal of the inflamed appendix, many of them no doubt would still be with us. But, unfortunately, the nature of our work is such that we cannot have our failures back and try them over again in a different manner. The barrister who is not satisfied with the result which his conduct of a case has received from any particular Judge, can take the case up to another Court and have it tried over again, altering his treatment, may be, and securing, perhaps, a different verdict. But there is no Court of Appeal to the surgeon who has been unsuccessful in his management of a case. It behoves him, therefore, so to act that he may take no needless risk when entering into a contest with his great Adversary, the Man with the Scythe.

Appendicitis is different from most other acute diseases in this, that one cannot tell exactly what is the state of affairs without making an incision. The senses are prevented in their working in that the deeply lying appendix is unapproachable. In the case of pneumonia, bronchitis, or heart disease, the ear tells precisely what is wrong and how things are going; when the liver, the kidney or the bladder is in trouble the sense of touch imparts valuable or precise information, whilst in most cases the eye gives important help. But an inflamed appendix can no more be felt than seen, and it is impossible to inform oneself of its exact condition. Holmes, the poet and physiologist, suggestively remarked that one cannot tell what wood a table is made of until he lifts up the cloth. And so it is with the disease in question, one cannot tell the exact state of the appendix until it has been exposed to view by operation.

I should think that no part of the body has caused so many surgical surprises as the appendix. In one case the symptoms of disease have been uncertain, or definite but slight; and when the surgeon exposes the appendix he finds it mortified. In another case he thinks that he can distinctly feel it in the iliac fossa; but in the operation not only is it absent from its proper situation, but, after half an hour's anxious search, he finds it in the depths of the pelvis, or tucked up behind the liver.

In other cases where the symptoms have been unmistakable and even acute, much to his surprise, the surgeon finds nothing worse than a little catarrhal inflammation in the vermiform process. But the commonest surprise of all is the discovery of a perforated appendix when the symptoms have been slight, and the operation has, by good fortune, been undertaken early.

[1] An abstract of a paper read before the Medical Society of London on Feb. 10th, to open a debate upon the Early Operation for Appendicitis.

### *The Quiet Stage.*

It is generally considered that operations done on about the fifth or sixth day of the disease have a particularly high mortality. The explanation is simple: precious time has been lost. It does not mean that the surgeon is not to operate on the fifth or sixth, or any other day: it means that the disease has gone on developing from, perhaps, an apparently simple beginning; that by this time, as likely as not, an abscess has formed, and that the surgeon's chance is by so much the worse. Further, it does not mean that if the operation is postponed to the seventh, or eighth, or to any other day, the chances of recovery would be better. With, or without operation, the patient may die; but the surgeon must do his best without regard to omens or statistics. It is out of the question now that he could advise waiting for the on-coming of the "quiet stage" before operating. The quiet stage in such a case may be nothing less than the silence of death itself. There would be no "fifth" or "sixth" or any other ominous day in the course of an appendicitis if operation had been promptly resorted to. And, as for the so-called "quiet" stage, I think it a misfortune that the specious term has ever been applied to appendicitis. But it has a great attraction, and even in medical conversation it is often spoken of as if there were actually a period in the course of the disease in which all urgent symptoms, local and general, passed away, and Nature seemed to be pausing in order that the surgeon might have a free and unhampered chance of putting a happy end to the trouble. Of course, in many cases of appendicitis the urgent symptoms do so clear up; but who is to know whether in any individual case they are going to subside or to rush forward with hurricane speed? No one can possibly tell.

Associated with the theory of a "quiet stage" in the general run of cases of appendicitis is that of a "walling off" of the area of disease. In some cases there is, no doubt, a walling off, and it is pleasant when operating on them to find the appendix shut off and lying handy in a small abscess. But in hurricane cases there can be no attempt at a walling off. Nature seems to be taken by surprise, and robbed of all chance of building up protective earth-works. One could scarcely expect a gangrenous appendix to glue itself to neighbouring coils of bowel, or to cause the production of helpful plastic lymph. In these furious cases there is usually no attempt at "walling off," so the germ-laden, sero-purulent exudation may be found tracking across to the opposite side, or draining down into the pelvis. There is evidently no more chance for a "walling off" than for the on-coming of the "quiet stage."

### *A Fool's Paradise Stage in Appendicitis.*

There is apt to be a fool's paradise stage in appendicitis, and it may come early or late in the course of the disease. Its occurrence is somewhat in this manner:—A patient has been complaining of pains in the abdomen for a day or two, with some slight tenderness in the right iliac fossa; the pulse has been, perhaps, at about 100 to 120, and the temperature at 101° F. After a baddish night the man wakes up and finds that the pains have gone, and that he is better in every way. The pulse has dropped, may be, to 90; the temperature is a degree lower, and the man's appearance is much better. His nearest relation, who has been in to see him, is delighted with his improvement. The nurse also recognises a great change, and the family doctor admits that since his visit of the previous night a marked alteration has taken place. But in spite of all this, the lower part of the right rectus remains rigid; there is still a resistance in the other muscles over the iliac fossa, and some tenderness on pressure over the cæcal region still remains. The patient is not actually better: he is worse. The state of his pulse and of his temperature is of no real clinical value—it is, on the other hand, actually misleading, and the sensations and the aspect of the patient are not to be taken as indications of improvement in the presence of persistent rigidity of the lower part of the abdominal wall.

What exactly has happened to produce this sudden change one cannot say. As likely as not, the swollen appendix has given way to internal pressure, and some thick muco-purulent fluid, or even a solid concretion, has escaped. Or

it may be that an abscess in, or close to, the appendix has burst its bonds. At any rate, some deeply-seated tension has been relieved and quiet has been restored—at least for a time. Of all those who are in connexion with the case, the surgeon is the least likely to be deceived. The continued rigidity of the abdominal muscles (which probably is still marked) is evidence to him that the storm-warning must not be lowered, although some heavy clouds have been rolled away and the sky looks brighter. He is still anxious to open the abdomen and so to *assure* himself; but in the altered circumstances he may be tempted to give way. Indeed, unless he is unusually firm—obstinate, his friends call it—he *will* give way. But perhaps by night the urgent symptoms have returned, the patient breaks out in a sweat, or has a rigor, and after a loss of 24 precious hours, leave to perform the necessary operation is given. The surgeon then finds a diffuse abscess, and possibly his patient is so bad that he dare not venture to search for the ruptured appendix.

We are told that fifteen hundred deaths take place in England and Wales every year from appendicitis—"unnecessary deaths," I have called them. If all of these cases could be diagnosed and operated on straightway, how many could be saved? Why not every one? And the only reason that can be urged against their all having the benefit of an immediate operation is a vague fear that if the practitioner were to make it part of his working creed that such treatment was advisable, he and his surgical associates might be regarded as needlessly enterprising, or "too fond of the knife"—to use a common expression. But as the result of their treatment, pretty nearly every one of their cases would get well. When every practitioner holds these views the Golden Age in Surgery will have begun to dawn. And then the operator who has his fair share of cases of appendicitis throughout the year will be able to say at the end of it, "I have not lost a single case, because I have got them all early!" And this will be by the family doctor, the physician and the surgeon all agreeing that as soon as ever the diagnosis is made that an appendix is inflamed it should be removed, and that if there is doubt about the diagnosis it should be settled by the making of an incision.

### *The Public and Appendicitis.*

But before this improvement can take place public opinion will also have to be educated. At present the greeting given by the friends to the surgeon who has been called in is apt to be, "We *do* hope that you will not think it necessary to operate." The mention of the word "appendicitis" has already caused alarm in the household, and the people have heard of so many deaths from that complaint after operation that they are inclined to attribute the fatal result to the operation rather than to the disease. Our profession recognises the fact that it is not well for the public to be kept ignorant on medical matters, and from the platform and by the newspapers much useful medical knowledge is being constantly and widely imparted. Thus, on such questions as the Listerian method, hygiene, food and drink, tuberculosis, and infection the public have learnt much, and the time has now come that they should be told something about the danger of delay in appendicitis; that in the case of acute or obscure pain in the abdomen they ought at once to send for their doctor, and if he advises that a surgeon be called in, no opposition should be urged to the proposal of an operation. They should be made to understand that *it is not the operation but the delay in performing it to which a fatal result should be generally attributed.*

Not long since I was called to operate on a boy from a large school with whose obscure abdominal pains the Matron had deemed herself competent to deal! Persons with abdominal pains are not cases suitable for treatment by Matrons or First Aiders; for every case of the kind the doctor should be *at once* called.

### *Two Series of Cases.*

In imagination let us take a hundred cases of appendicitis, from the beginning of their manifest infection, and form a rough estimate of the course which they will run, basing our guess on what we have seen in other instances. It might be fair to suggest that 30 of them would probably get well with what is called "medical treatment." This might be too large a proportion, but it may pass. Of the 70 remaining cases perhaps ten might have subsequent slight local troubles from which they also may get quite well without active help; whilst an equal number might have recurring attacks which rendered them chronic dyspeptics, or even, from time to time, suddenly and most inconveniently took them from their occupation and threatened them with disaster. At last, finding the appendix a constant source of worry and anxiety, they had it removed when the trouble was in the "quiet stage." Accepting this estimate, there are still 50 cases left which will not fall into any one of those three groups. Five or six of them, perhaps, will go on with alarming rapidity, and when a day or two later the abdomen is opened—tardily opened, I will say—the appendix will be found gangrenous or perforated, with, may be, an unsuspected abscess in its neighbourhood. It matters not who the surgeon is who operates, some of those patients will certainly die, the proportion being settled, apparently, by blind chance. Of the remaining serious cases which do not run a hurricane course, some will be associated, perhaps, with subphrenic abscess, some with pelvic abscess, some with diffuse suppuration of the abdomen, with intestinal obstruction, or with septic intoxication. The list of the later complications of neglected appendicitis is long and appalling, and they claim a large number of victims; they ought all to have been avoided. It is impossible even to make a guess of their actual figure of the fatal cases, so, being unknown, let it be called $x$—an *x percentage* out of the 50 is lost.

Now, by way of contrast, let another hundred cases of appendicitis in the earliest stage be taken, and let every one of them be operated on as soon as the diagnosis is made. By the light of our former series, it is at once seen that 40 cases have been submitted to operation which would have recovered without surgical aid. I admit it. But has any harm been done by operating? Have any people been wronged by the operation or any surgical principles violated? At any rate, those people, 40 of them (for they have all recovered), will not run the risk of having appendicitis again—and that is something to be thankful for. Then, by the early operation, we have put right those cases of slight relapsing forms of the disease; these 10 people have been saved the misery of an annoying chronic dyspepsia—which is a common, and often unrecognised, complication of a lurking appendicitis. We have made those 20 persons absolutely safe and happy. There yet remain 50 individuals who, in the other series, became the subject of local and diffuse abscess in the abdomen and pelvis or who were attacked by some form of blood poisoning. We have got them also safe, every one. And we have not lost a single case out of the hundred—because the appendix was removed as soon as it was found to be diseased. What a contrast between the two series! Yet in the beginning the patients were all alike—all apparently simple cases of appendicitis. There can, I think, be no difference of opinion on the subject—*x per cent.* of the first lot of cases was lost because of want of surgical enterprise, whilst not a single death occurred in the second series. So that early operation in appendicitis gives *x per cent.* the better result.

Then, why is it that early operation in appendicitis is not the rule? The reply may be that it is all very well to talk about *series of cases*, but when the family doctor is in attendance on any particular case, and is surrounded by anxious parents and apprehensive and criticising friends, he has to disregard the average and think only of the *individual*. That, in other words, circumstances alter cases. Still, if circumstances do alter cases, they ought not to disturb the principles on which surgical cases should be treated. But hitherto there has been no principle laid down by professional consent and teaching in England as to what should be the rule and guide in the treatment of appendicitis. But it must come ere long.

### *Stealthy Appendicitis.*

There is a small group of cases of appendicitis of extreme interest and importance to which special attention should be drawn. Two or three of them, I dare say, might be found in every 100 cases, and they come like a thief in the night. Here is an imaginary clinical sketch of one of them:—An athletic young man, who has never known a day's serious illness, has been for a long bicycle ride, and, returning home, has eaten a hearty supper, and gone to bed dead tired. In the night he wakes up feeling very ill; he vomits, and then, finding himself much better, goes back to bed and falls asleep. But in the morning he does not feel inclined to get up, and as he complains of pain, his mother calls in the doctor, and, meeting him in the hall, says that the boy

had eaten something for supper which made him sick; that he is better now, but she hopes the doctor will not let him go to the office that day. He looks fairly well, and he is lying flat on his back with his knees not drawn up; his pulse-rate is scarcely quickened and his temperature is but slightly above normal. May be, his face is a little flushed and anxious; he has some slight tenderness in the right iliac fossa, but there is no swelling to be made out. Perhaps there is some rigidity of the neighbouring muscles. He is strictly dieted, and a fomentation is applied all over the abdomen. In the evening he is not so well, but he has not vomited again, and he says that the fomentations have eased his pain. The doctor is by no means happy about him, but he says some cheering words, and promises to come round early in the morning to see him. The patient passes a very restless night, and when the doctor examines him he finds that there is a marked contraction of the lower part of the right rectus and more tenderness in the fossa. An operation is talked about, but, for some reason or another, it is not done till the evening. A gangrenous and perforated appendix is then removed, and a large quantity of foul sero-purulent fluid wells up; a drainage-tube is inserted and fomentations are re-applied. What is the prognosis? Is it not quite likely that the lad will die?

### "*When to Operate in Appendicitis.*"

Supposing that there is a surgeon here who does not hold these views in connexion with the treatment of appendicitis, and someone asks him, as a matter of information, what are his guides as to when an operation should be advised, he may not find it easy to reply. The pulse and temperature may be normal, and the patient's aspect may be good although the disease is far advanced; and there may be no fullness in the iliac fossa and but slight resistance, yet the case is in urgent need of help. It is unsurgical to wait for some beacon-flash telling him when in any particular case he should advise operation, and I think that he would find it difficult to satisfy his questioner. On the other hand, if he held the opinion which has been forced upon most of us, he would simply reply, "I would urge operation as soon as ever I suspected that the appendix was inflamed." That is a clear answer; it cannot be misunderstood. And amongst the many great advantages of the early operation is this, that no risk is run of the need of any of those secondary procedures which are apt to be called for if the case is allowed to drift on to suppuration. After the early operation the wound is closed once and for all; no drainage-tube is used, and there is no fear of a future ventral hernia or of a bulging at the scar, of inflammatory adhesions or intestinal obstruction.

### "*Look and See.*"

It is constantly argued that if the appendix is removed as soon as it is believed to be inflamed, some cases will be submitted to operation in which, after all, no disease of the appendix is discoverable, and that many others will be so dealt with which might probably have got well without any active surgical help. This I have admitted, but it is the only argument which can be raised against the early operation. However, the admission by no means weakens my appeal. We sometimes hear the same sort of criticism made in the course of our practice by persons who have no claim to express any opinion of value in the matter. "This boy," says a proud mother, "had an attack of stomach-ache last month, and the doctor wanted to have him operated on. But his father wouldn't allow it, and the boy has been perfectly well ever since!" That valiant decision exalted the man in his wife's opinion, and at the doctor's expense; but my sympathy is all with the doctor. And it is more than likely that if the boy got another attack of the kind, and the father again stayed the surgeon's hand, the result would be disastrous, and the father might regret that he had ever stood in the way of operation. The conclusion of an attack of appendicitis is not infrequently associated with regret.

Let me briefly give a clinical sketch of the imaginary case just mentioned:—The boy had been sitting on damp grass watching a cricket-match, and next day he was seized with acute catarrhal appendicitis. The doctor found him with a pulse of about 120; his respirations were quick: he had vomited, and he complained of pain and tenderness in the right iliac fossa. The doctor, perhaps, had recently had a case with like symptoms in which, when an operation was tardily resorted to, a mortified appendix was found in a stinking abscess, and the patient had sunk; he dreaded a repetition of the scene, and was anxious to be in time on this occasion.

It is because of the twofold uncertainty which must always be associated with appendicitis—uncertainty as to the actual state of the disease and uncertainty as to the course which it will take—that the surgeon should be anxious to *look and see*. But, as it is, there is no general agreement as to what should be the exact procedure. One medical man may urge treatment by rest and opium, because he has seen several patients get satisfactorily over an attack when thus dealt with. Another may insist that treatment should be by castor oil or Epsom salts, because he has known it answer well; and a third will swear by starvation, fomentation and enema. And no one can affirm that in any case the adoption of one of these methods may not meet with success. But after dealing with a few more cases on such lines he would scarcely failed to be pulled up short and to find his faith rudely shaken.

A whist-player with five trumps in his hand may win the trick although he leads from his short suit, but a fuller acquaintance with the game will prove to him that it is not safe play. In the course of time the experience of the many has been crystallised out into *Rules*, which intelligent players find it to their advantage to observe. And so it is in Surgery; out of the experience of the many, definite principles of practice are constantly being laid down to become in due course accepted as *Rules*. And, judging from what one sees and hears, the rule is gradually being established in this country that a case of appendicitis should be operated on as soon as ever the diagnosis is made—within the first twelve hours, if possible—that the patient will then not only get well, *almost for certain*, but will get well very quickly.

But would it really be a terrible calamity if an incision were made over a suspected appendix in a case in which it was not actually affected? For my own part, I give the question an unhesitating, "No." A cleanly made opening into the abdomen can do no harm, and I look forward to the time when it will be no unusual thing to hear that such and such a surgeon has been looking into an abdomen, or, to be more precise, has been passing his finger into an abdomen for this purpose, and that, after all, there was nothing wrong with the appendix. The dread of advising an incision in a case where the appendix might be found little or not at all affected, is greatly exaggerated. The surgeon's reputation as a diagnostician is of far less importance than the safety of the patient, and if his fruitless act be called a *mistake*, at any rate, it is a mistake on the right side. The surgeon who is haunted by the fear of making a mistake has made an unfortunate choice of his Profession.

I can remember the time when a surgeon was afraid to cut into a mass of inflamed tissues lest, by chance, there should be no pus found. He preferred to "wait for fluctuation" (the expression even yet sounds familiar). But now that one understands the danger of acute inflammation and of tension, one unhesitatingly makes a free incision into an area of acute cellulitis so as to end the painful disease and diminish the risk of sloughing and of other effects yet more serious. But the same surgeon is still apt to be content to dally with, and hover helplessly over an inflamed appendix because he is not "quite sure." In politics the motto "Wait and see" may suffice: for the surgeon in a case of possible appendicitis it should be "*Look and See*," and Medicine and Surgery will not be in a satisfactory state as regards the treatment of appendicitis until the prompt making of a small iliac incision becomes part of the routine treatment, just as the kidney is shadowed upon the screen, or a sound is passed into the bladder, in a case of suspected urinary calculus. An inch incision through the abdominal muscles will suffice if it is made quite early, but an incision of six inches or more may prove ineffectual if it is delayed.

I have long since made up my mind what I shall do if I, in my turn, become the subject of appendicitis—I shall forthwith call in a surgical friend, and if he says, "Yes, I think that the appendix is at fault," I shall ask him if he would mind my getting another surgeon (not a physician) to come and see me with him for the purpose of confirmation;

and on the diagnosis being confirmed, I shall beg him *at once* to operate. And if these principles were adopted in all cases of appendicitis, the mortality of the disease would probably be lowered by 90 *per cent.*

*Misleading Symptoms.*

Whether all the views advocated in this paper prove acceptable or not, there is, at any rate, one point which ought to receive a more general recognition; it is the reference to the fact that there may be a comparative absence of clinical signs in the presence of advanced and perilous disease in the appendix. It does not at present seem to be generally realised that the pulse and temperature of a person may be normal in spite of the appendix being gangrenous or perforated; that in some of these stealthy and rapid cases there is absolutely no fullness in the fossa; and that if the chief pathological change in the appendix is gangrene there need be very little local tenderness—for there is no sensation in dead tissue; that as there is no sensation in a mortified appendix, there need be no reflex rigidity of the abdominal muscles covering the fossa; that there being no excitement of pulse or temperature, and little or no local pain or tenderness, the patient may make light of his trouble and that his aspect may be deceivingly cheerful. Thus, in the most dangerous class of cases of appendicitis there may be but little either to cause anxiety or to attract serious attention. Every operating surgeon will bear one out in this, and will agree that, for the happiness of all concerned, the family doctor should never sit pondering over his case of suspected appendicitis, but should *at once* call in surgical aid. If the surgeon then says that because he is not sure he would rather wait a little, at any rate, whatever happens the doctor will not afterwards have anything to reproach himself with. But I do not think that there are many surgeons who would counsel delay: we have all seen enough of the danger of waiting.

In no respect, I think, has improvement in surgical treatment in the last quarter of a century been more marked than in that of strangulated hernia. Taxis and the hot-bath happily have become things of the past. The general practitioner sends his patient into the hospital without hesitation or delay, or calls in the surgeon for immediate operation; and instead of there being now a high death-rate from strangulated hernia, statistics would show a most remarkable improvement. And what, in my opinion, is wanted at the present time is a similar waking up of the Profession with regard to the treatment of appendicitis. We have heard of the sailor who, when his ship was in action, saw an unexploded shell, with a time-fuse attached, land upon the deck. He did not wait to see the development of events, but taking the shell up in his arms, dropped it over the ship's side out of harm's way. An inflamed appendix is a shell with a lighted time-fuse, and though in any case it may happily fail to explode, it is far safer to lift it out at once and drop it over-board.

In the course of this paper scarcely a word has been said as regards alternative methods of treatment, for, in my opinion, *there is no place for the discussion of general measures until after the inflamed appendix is out.*

Whilst waiting for leave to operate, nothing whatever should be given by the mouth, and no fomentation or water-dressing should be used, because wetting the skin spoils the antiseptic effect of the tincture of iodine, which should at once be freely and widely painted over the region in preparation for operation. But there will be plenty of scope for treatment after the appendix has been removed, and especially so in those cases in which the blood or the peritoneum has already been poisoned by absorption.

The discussion at the present time should be directed towards the solution of the important question as to whether immediate operation or temporising ought to be the rule in the treatment of appendicitis. If the answer is unmistakably in favour of immediate operation, such subjects as that of the choice of anæsthetic, the routine washing out of the stomach before the patient leaves the table, the administration of opium or of purgatives may well be referred to; but the main question should first be settled. And in a meeting such as this the answer will be likely to prove useful in the drawing up of a Rule for the guidance of the practitioner in the treatment of every case of appendicitis.

# THE REMOTE RESULTS OF TONSILLOTOMY AND TONSILLECTOMY:

## AN ANALYTICAL SCRUTINY OF 220 UNSELECTED CASES.

BY HAROLD WHALE, M.D. CANTAB., F.R.C.S. ENG.,

ASSISTANT SURGEON, METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL.

THE constantly recurring discussions as to the relative merits of these operations have usually centred around technique; or, when the claims of one or the other have been urged in reference to the results obtained, these claims are unsupported by systematic records of cases. Since we do not even yet know whether the tonsil is a friend or enemy, such a record is called for.

*Method of investigation.*—All the patients have been operated on in Mr. W. D. Harmer's clinic at St. Bartholomew's Hospital. There were 110 cases of tonsillotomy and 110 of tonsillectomy. The sexes were about equally divided; the ages at operation ranged from 3 to 43. The earliest of these operations occurred in 1908, the latest in 1912; 70 per cent. of the patients were examined at an average period of two years after operation, and all of them since May, 1912. Case-cards were made recording in detail their complaints before and after the operation, the conditions found at subsequent examination, and the results of all previous operations. From these cards were prepared a long list of classified complaints and morbid conditions, which again were cross-classified and analysed. The statistics so obtained are not given *in extenso*, excepting where they justify obvious inferences; apart from this, only the evident results of the analyses are stated.

*The complaint.*—In the case of certain complaints, in spite of a detailed analysis, no strong inference can be drawn as to what is the operation of choice. Thus, for obstructive dyspnœa tonsillectomy is slightly more likely to cure, and much more likely to prevent recurrence. For aural troubles (deafness, Eustachian obstruction with retracted drums, Eustachian catarrh) tonsillectomy is better. For dysphagia and for nasal affections (snoring, rhinorrhœa, epistaxis) no deduction is warranted as to the operation of choice. For gastro-intestinal troubles, remote affections such as various forms of goitre, and systemic infections (rheumatism, chorea, anæmia, tuberculosis) no strong inference is justified. It is noteworthy that in some cases rheumatism occurred after enucleation in patients who had never suffered before. The following figures show that if rheumatism and chorea be classed together tonsillectomy has a slight advantage. Rheumatism or chorea: Tonsillotomy, cured, 63 per cent.; not cured, 37 per cent. Tonsillectomy, cured, 68 per cent.; not cured, 32 per cent. Tonsillitis, voice troubles, and lymphadenitis will be discussed at more length below.

*Complaints which have arisen since (the last) operation, which were unknown prior to that operation, and which might reasonably be traced to the operation.*—These include tonsillitis (after tonsillotomy only), rhinitis, lymphadenitis, rheumatism and chorea, and laryngitis or functional voice troubles. In some cases deformities of the palate, &c., were responsible. To these statistical reference is made below under "Deformity," and after eliminating these it is found that, with the single exception of voice troubles, the figures obtained from the lists of complaints arising *de novo* after operation favour tonsillectomy in every case. The fact that voice troubles stand alone in that they are just as likely to be initiated by tonsillectomy as by tonsillotomy is interesting in view of what is further stated below under "Voice troubles."

*Tonsillitis.*—After a complete tonsillectomy faucial tonsillitis is, of course, impossible. And none of the patients who had undergone this operation even alleged that they had suffered from tonsillitis for the first time since operation—which, however, actually occurred in 3 per cent. of the tonsillotomy cases. But there were some of the tonsillectomy patients who declared they had experienced a recurrence of former inflammation. Certain of these showed small remains, usually at the lower pole, on or in the plica, so that

the operation was not truly tonsillectomy. In others no remains could be seen; and the reasonable explanation of their definite statement that tonsillitis had been diagnosed since operation would be that their ailment had really been pharyngitis. The analyses show not only that the absence of evident tonsillar remains does not determine freedom from an infection which may be diagnosed as "tonsillitis," but that, conversely, the presence of such remains does not render such infections much more probable. The explanation of this apparent paradox depends on the situation of the remains, and on certain other anatomical considerations to which allusion will be made under the heading "Lymphadenitis."

*Inference from figures obtained.*—For tonsillitis, tonsillectomy is the operation of choice; because if as much tonsillar tissue as possible is removed complete in its capsule, there is a greater prospect of permanent cure, and there is no probability of initiating an infection.

*Laryngitis and functional voice troubles.*—Cases: Tonsillotomy, 26. Result: Cured, 15 (58 per cent.); not cured, 6 (23 per cent.); uncertain, 5 (19 per cent.). Cases: Tonsillectomy, 29. Result: Cured, 14 (48 per cent.); not cured, 14 (48 per cent.); uncertain, 1 (4 per cent.).

*Analysis of complaints.*—A. Singing voice: the usual trouble is weakness, either of the middle register where head-notes change to chest-notes, or of the notes at the top of the compass. B. Conversational or oratorical voice becomes thick, husky, or hoarse. C. Conversational or oratorical voice is weak, so that when used it either suddenly breaks or rapidly becomes fatigued. D. Intermittent aphonia, partial or complete. By subdividing each of these classes into cases cured, not cured, and arisen afresh since operation, I have found that for Class D there is no great advantage in either operation, and for Classes A and C tonsillectomy is better. But Class B, where the speaking voice becomes thick, husky, and hoarse, comprises more cases than all the other classes added together, and in this class the figures are as follows:—Tonsillotomy: Cured, 65 per cent.; not cured, 15 per cent.; uncertain, 20 per cent. Tonsillectomy: Cured, 25 per cent.; not cured, 69 per cent.; uncertain, 6 per cent.

As regards recurrence of voice troubles, it was mentioned above that these are the only complaints in which recurrence is quite as probable after tonsillectomy as after tonsillotomy. As far as these cases are concerned, therefore, it appears from the gross figures that tonsillotomy has proved the operation of choice, and tonsillectomy is much less suitable. The failure to cure, or fresh supervention of, voice troubles after operation is in some cases referable to deformities produced by the operation. But the cases where this failure or sequela occurs without any demonstrable deformity are, after tonsillotomy 27 per cent., and after tonsillectomy 48 per cent. We must therefore inquire into the relative advantages of partial or total removal of the tonsil for acoustic purposes. With this object it was necessary to eliminate all cases which showed any such deformity as might account for failure to cure voice troubles. The remaining cases were dealt with as follows. The cases cured of voice troubles by tonsillotomy, and also those cured by tonsillectomy, have been divided into those exhibiting and those not exhibiting tonsillar remains at examination. The cases not cured by one or other operation, or in which voice troubles arose only since operation, have been similarly divided. The result is striking. Of the cured cases, whether total or partial emptying of the tonsillar fossa was intended by the operation, nearly one-half present considerable tonsillar remains; whereas the percentage proportion of uncured cases is nearly twice as great after tonsillectomy as after tonsillotomy.

It is a fact that in any room or hall two pillars jutting out from the wall thus— interfere more with sound-waves than a single wide buttress or plateau of the same width and depth, thus— And it seems possible that, after tonsillectomy, the two projecting tonsillar pillars, enclosing between them the deep concavity of the empty fossa, may have a similar effect. Possibly also, if the patient have to use the voice much, he may seek to counteract this impediment to free reverberation by more vigorous voice-projection, this fatiguing the laryngeal muscles. It may be argued that, after tonsillectomy, the pillars in course of time become less prominent, and the fossa levels up, so that the surface approximates to a plane. But the average length of time since operation which had elapsed when the cases of uncured or fresh voice troubles were examined was 1 year and 5 months. In none of them did the tonsillar region at all resemble a plateau, and for the voice to be injured for even this period of time may be a serious matter.

*Inference from figures obtained.*—Of the two operations, tonsillotomy is more likely to cure functional defects of voice, and less likely to leave such a sequelæ.

*Lymphadenitis.*—Three lists were made, of cases: (1) Exhibiting enlarged glands at the time of operation; (2) exhibiting enlarged glands at subsequent examination—i.e., three months to four years after operation; and (3) exhibiting tonsillar remains at subsequent examination. Cross-classifications of these three lists showed how far they overlapped—i.e., how often "glands before operation," "glands after operation," and "tonsillar remains," occur or do not occur in a given patient. An obvious lingual tonsil was found in only two cases, and any mention of remains has reference to the faucial tonsil. The figures are in favour of tonsillectomy.

Lymphadenitis uncured by operation: Tonsillotomy, 43 per cent.; tonsillectomy, 33 per cent. Lymphadenitis which had never occurred prior to operation and which was found at subsequent examination, all other possible infective foci being excluded: tonsillotomy, 30 per cent.; tonsillectomy, 20 per cent. Now it seems fair to assume that when lymphadenitis is due to an infection from a tonsil or part of a tonsil, this infection must be homolateral on the same side as that tonsil. In investigating this point it was necessary to eliminate all cases in which either glands, remains, or both, were bilateral. It was found that a homolateral infection of glands, occurring only since the operation, was much more frequent after tonsillotomy. The contralateral cases—i.e., where tonsillar remains are found only on one side and enlarged glands only on the other side—occurred with one exception after tonsillotomy. In other words, the infection of glands from an empty tonsillar fossa occurs more frequently when the guillotine has been used in the old-fashioned way than by any other method. To explain this we are reduced to mere speculation. After tonsillotomy, as ordinarily interpreted, the capsule is left behind, whether any tonsillar remains keep it company or not. And it is possible that after a very thorough tonsillotomy, leaving no macroscopic remains, the capsule keeps the fossa stretched open, and so more prone to absorb irritants or micro-organisms. Or that after a still more thorough tonsillotomy the guillotine in certain places cuts deeply, well beyond the capsule, freely opening up the areolar tissue, which subsequently heals by the formation of granulation tissue too loose and thin to resist septic absorption. It is noteworthy that tonsillar remains, after either operation, were found more often on the left side. This may be due to the attitude of the surgeon or because his view of the second tonsil attacked is impeded by hæmorrhage.

One other point calls for mention concerning lymphadenitis in its relation to tonsillar remains. The latter existed sometimes for the whole length of the tonsillar fossa, at other times as a nodule at the top or bottom. First the cases in which remains occurred at only one pole were picked out, and then this list was still further reduced by selecting only such as showed a homolateral lymphadenitis. The figures thus obtained bring out a curious fact. For, whereas it is in some cases fair to accuse a solitary remaining lower pole of infecting glands, in no case can this charge be laid against a solitary remaining upper pole. Since no known distribution of efferent lymphatics can explain this, I offer the following hypothesis. In cases where, subsequent to operation, pyo-alveolaris or other infection of the oral mucosa occurs, infected saliva and mucus reach the lymphatics by falling by gravity into the most dependent part of the fossa; here, moreover, the plica triangularis tends to lock them up. Whereas, when tonsillar remains are limited to the uppermost part of the recess, infected saliva comes into contact with them later and for a shorter period of time. This suggestion applies to the occurrence after operation of not only lymphadenitis, but also of tonsillitis.

*Inferences from figures obtained.*—For the cure or avoidance of lymphadenitis tonsillectomy is the operation of choice. Occasionally glands are infected from a tonsillar fossa which is to all appearance quite empty, whereas the other side exhibits tonsillar remains but no glands, and this occurs practically only after tonsillotomy. Wherefore it appears that, if tonsillotomy be practised for the cure of lymphadenitis, it is a lesser evil to leave remains than to cut so deeply as to either leave a clean capsule or to cut into the areolar tissue deep to it. In other words, tonsillotomy, if practised, should be designedly only a very partial operation. If the view be adopted that tonsillar remains tend to cause lymphadenitis, it is more important to eradicate the lower pole (with the plica triangularis) than the upper pole.

*Hæmorrhage due to the operation.*—After tonsillotomy: 1 case in 110. After tonsillectomy: 8 cases in 110. Since this question of the probability of dangerous bleeding is keenly debated, I have supplemented these scanty figures by examining the records of all tonsillar operations at St. Bartholomew's Hospital in certain years. Considering only those cases which were undoubtedly admitted to the wards for post-operative hæmorrhage and for no other reason, it is found that in 1909, when tonsillectomy was rarely practised, there were 12 cases of serious hæmorrhage out of 984 operation cases. In 1912, when tonsillectomy was frequently practised, there were 53 out of 1561 operated on. The percentage is therefore 1·2 per cent. in 1909, as against 2·9 per cent. in 1912. The percentage figures in 1907 and 1908 are, as far as I can ascertain, 0·4 per cent. and 1·2 per cent. respectively. In these statistics cases admitted for post-operative shock, faintness, or collapse have been excluded, although many of them may have bled dangerously; were they included the inference would be the same, but even stronger. Thus an investigation of the records of 3697 tonsil operations affords strong evidence that dangerous hæmorrhage is more than twice as probable after tonsillectomy as after tonsillotomy.

*Deformity and its responsibility for failure to cure the patient's complaints or for the supervention of fresh complaints unknown prior to operation.*—The deformities found comprise thickening, scarring, kinking, or notching of the palate, with or without lateral deviation of the uvula; overgrowth of the plica triangularis, sometimes imprisoning a tonsillar remnant; adhesion of the two tonsillar pillars together on one side, or of the posterior pillar to the posterior pharyngeal wall.

Deformity was found in 21 per cent. of cases after tonsillotomy, and 23 per cent. after tonsillectomy. But in many cases the deformity is harmless, and an analysis shows that deformities causing trouble such as obstructive deafness, rhinorrhœa, tonsillitis, or thickness of voice occur after tonsillotomy in 6 per cent. of cases, but after tonsillectomy in 10 per cent.; thus, *baneful* deformity is commoner after tonsillectomy. Moreover, it can be seen which kinds of deformity are baneful and which are harmless. If we consider adhesions of the posterior pillar to the pharyngeal wall, drawing the palate backwards, or overgrowth of the plica triangularis, these effects were harmful in 11 cases and harmless in 8. When, on the other hand, we analyse the cases where the palate is so notched, kinked, and scarred that it is drawn downwards, not backwards, such effects were harmful in only 7 cases and quite harmless in 22. It is evident that the majority of harmful deformities belong to the former category, and it is easy to believe that if the palate is drawn backwards, partially shutting off the post-nasal space from the pharynx on one or both sides, nasal, aural, or phonetic sequelæ are more likely than when it is merely depressed.

Finally, a division of cases of deformity into right, left, and bilateral, shows that bilateral deformities are more than twice as frequent after tonsillectomy.

### CONCLUSIONS.

*The disadvantages of tonsillotomy are:* 1. The initiation of an infection, whether manifesting itself as tonsillitis, lymphadenitis, or both. Such sequelæ are more likely if a very free and deep removal has been performed than if only a moderate amount of the tonsil has been removed. 2. Recurrence of the trouble for which the operation was performed; except in the case of voice troubles, when recurrence is no more probable than after tonsillectomy.

*The disadvantages of tonsillectomy are:* 1. A risk of serious or even dangerous hæmorrhage at operation. 2. A risk of harmful deformity supervening later; the deformities most likely to cause harm are adhesion of the posterior faucial pillar to the posterior pharyngeal wall, and overgrowth of the plica triangularis. 3. A risk of voice troubles supervening later, even without any causative deformity. To any patient who requires operation for some other reason, who has never had any voice trouble, and whose livelihood or occupation depends on the use of the voice, tonsillectomy should be urged with caution.

Thus it would appear that tonsillectomy is the more dangerous operation. But with the single exception of voice troubles, it is more likely to permanently cure the complaint for which advice is sought; notably so in the case of tonsillitis or lymphadenitis; moreover these two infections are never initiated by tonsillectomy. It is important to eradicate the lower pole.

Harley-street, W.

---

EUGENICS EDUCATION CONFERENCE.—On March 1st, at the University of London, the Eugenics Education Society have arranged for a conference on eugenics and education. The difficult subject of sex education in schools will be discussed. The society takes the view that it is wise not to introduce the subject into the school curriculum until the teachers have themselves been trained, but many of the heads of training colleges believe that there need be no such delay. Major L. Darwin will deliver the presidential address on the Eugenic Ideal. Already 500 names of heads of elementary and secondary schools and training colleges have signified their intention of attending the conference. Tickets of admission can be obtained on application to the honorary secretary, Kingsway House, Kingsway, W.C.

FREEMASONRY AT THE INTERNATIONAL CONGRESS OF MEDICINE.—The committee of representatives of the medical lodges in London announce that a lodge meeting of medical Freemasons who are members of the Seventeenth International Congress of Medicine, London, will be held on Monday, August 11th, in the Grand Temple at Freemasons' Hall, Great Queen-street, W.C. The Most Worshipful the Pro Grand Master, the Right Hon. Lord Ampthill, G.C.S.I., G.C.I.E., will open the lodge at 5 P.M., and close it at 6 P.M. A reception will be held at 4 P.M. in the Connaught Rooms, adjoining Freemasons' Hall. It is hoped that all colonial and foreign brethren who wish to be present will communicate with the grand secretary of their own jurisdiction as soon as possible in order that suitable arrangements may be made. Brethren in the British Isles should communicate with the honorary secretary, Dr. R. J. Probyn-Williams, P.G.D., 13, Welbeck-street, Cavendish-square, W.

THE ROYAL SANITARY INSTITUTE.—The fifty-fifth course of lectures and demonstrations for sanitary officers will be given during February, March, and April at the Royal Sanitary Institute and at various works and offices, private and municipal. The first part of the course will consist of 25 lectures on physics and chemistry, municipal hygiene, building construction in its sanitary relations, and so forth, and the second part of seven lectures on meat and food inspection and the analysis of water and drugs. The Museum of Sanitary Appliances and the Library of the Institute will be open free to students attending the course. Monday, Feb. 3rd, was the date of the first lecture, the others being given on succeeding Mondays, Wednesdays, and Fridays, and the demonstrations on Tuesdays, Wednesdays, and Saturdays. The lecture hour is 7 P.M., and the lecturers include Dr. J. Priestley, medical officer of health of Lambeth, Mr. A. Wellesley Harris, medical officer of health of Lewisham, and Mr. A. R. Littlejohn, deputy medical officer of health of Battersea. The usual course of lectures to assist school teachers and others entering for the examinations in school hygiene will commence on Feb. 24th. In connexion with these lectures special arrangements have been made for each student to attend a course of six infant consultations under the direction of Dr. Eric Pritchard, who is among the medical lecturers, the others being Dr. James Kerr, Dr. A. B. Kingsford, and Mr. E. H. T Nash. The Twenty-eighth Congress of the Institute will be held at Exeter from July 7th to 12th, under the presidency of Lord Fortescue, K.C.B. Further particulars of this congress and of the lectures may be obtained from the secretary of the Institute, 90, Buckingham Palace-road, London, S.W.

# AN OPERATION FOR HYPOSPADIAS.

BY ARTHUR EDMUNDS, M.B., M.S., B.Sc. LOND., F.R.C.S. ENG.,

SURGEON TO THE GREAT NORTHERN CENTRAL HOSPITAL; ASSISTANT SURGEON TO KING'S COLLEGE HOSPITAL.

HYPOSPADIAS is a condition which varies in degree from a mere elongation of the external meatus to a complete cleft of the urethra as far back as the perineum. In the type of case for which an operation is most commonly performed, the opening of the urethra is situated just in front of the scrotum. The penis is strongly curved, and when an attempt is made to straighten the organ, the imperfectly developed urethra stands out as a definite cord. The disabilities which this deformity entails are, that during micturition the stream of urine is projected downwards and backwards and soils the patient's clothes; that the curvature of the organ and the position of the urethral orifice render coitus difficult, and in addition, that the presence of a misshapen penis is apt to have a harmful mental effect on the patient, leading him to fancy himself fundamentally different from the rest of mankind.

The objects of the operation must therefore be to straighten the organ and to provide the urethra with an outlet at the end of the penis. The formation of a floor to the urethra in the body of the penis can be accomplished fairly easily, but difficulties are encountered in attempting to form the glandular urethra and in obtaining a permanent straightening of the penis.

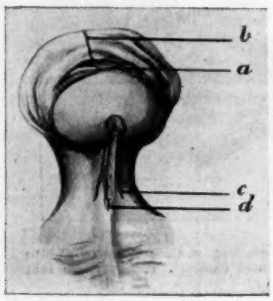
The superficial tissues of the penis are extremely lax, and hence it is possible to perform a plastic operation, which would be impossible in dealing with more rigid tissues; but at the same time union is hindered by the constant passage of urine, and hence it is necessary to provide for the adequate nutrition of the flaps by every possible means. In the operation about to be described a new urethra is formed out of the prepuce, which in hypospadias is represented by a large hooded flap of tissue on the dorsum of the penis. The prepuce is chiefly vascularised by one or more vessels which enter it on the dorsum of the penis near the middle line. The operation is performed in three stages.

*Stage 1.*—The first step of the operation consists in making an incision (Fig. 1) through the whole thickness of the prepuce, so as to form a sort of buttonhole, which is then stitched round in much the same way as a tailor finishes off a buttonhole in a coat. The object of this incision is to divide the dorsal vessels of the prepuce, and so lead to the formation of a number of smaller vessels, which will vascularise the prepuce from the sides. The wound thus made should be allowed to heal and the resulting cicatrix to soften before the second stage of the operation is performed—that is to say, about three months should be allowed to elapse.

FIG. 1.

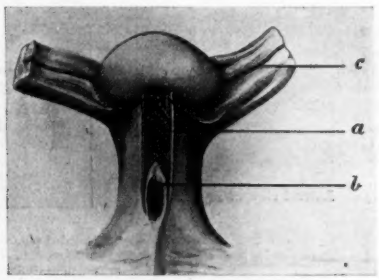
Formation of the buttonhole in the prepuce, showing the method of passing sutures, two of which are left untied.

FIG. 2.



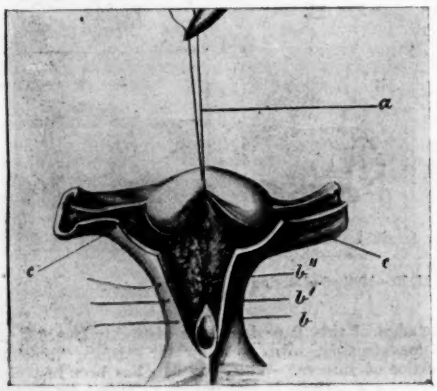

The incisions for the second stage of the operation. *a*, The buttonhole. *b*, Incision through the prepuce. *c*, Incision around the urethral groove. *d*, Incision through flap of mucous membrane at opening of urethra.

FIG. 3.



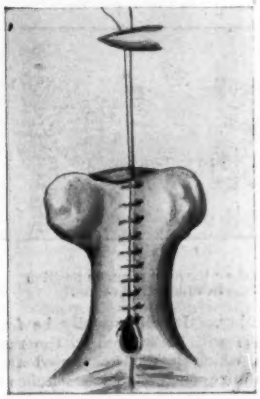

The urethra detached. *a*, Incisions for the detachment of the urethra. *b*, The shrunken urethral groove. *c*, Incision, on the left side, around the glans and along the preputial flap.

FIG. 4.




Detachment of the flaps. *a*, Guide stitch through the glans. *b*, First stitch. *b'*, Second stitch. *b''*, Third stitch. *c c*, Points on the flaps which will form the most anterior part of the roof of the urethra.

FIG. 5.



Completion of the second stage. Ventral aspect of the penis.

*Stage 2.*—An incision is now made through the prepuce from the middle of the buttonhole to the free border, so as to form two irregular flaps (Fig. 3 *c*). Two incisions are now made, one along each side of the urethral groove; these are joined in front by an incision in the glans around the point where the meatus would normally be situated, the whole forming a long inverted U-shaped incision around the urethral groove (Fig. 2, *c*). The opening of the urethra is sometimes constricted, or bounded by a thin fold of mucous membrane, which should be divided by a short incision (Fig. 2, *d*). The incision around the urethral groove is now deepened so as to dissect up this structure completely; this is best done by a series of short cuts made in the direction shown in Fig. 3, *a*. When this has been carried out

the condition shown in Fig. 3 will be produced—that is to say, the penis will be straight, and there will be a broad raw surface on the under aspect, at the scrotal end of which the urethra opens. The detached urethral groove does not remain as an elongated flap, but contracts into a surprisingly small mass (Fig. 3, *b*). An incision is then made on each side from the anterior portion of the raw area around the corona glandis, and about a millimetre away from this structure until the middle of the preputial flap is reached, when the direction of the incision is altered and it is carried along the long axis of the flap up to the free edge which was made by dividing the buttonhole (Fig 3, *c*). This incision should extend just through the skin, and it will then be possible to open out the lax tissues so as to produce the conditions shown in Fig. 4; this should be done with as little actual division of tissue as possible.

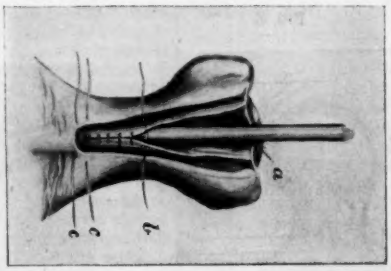
The next proceeding consists in passing stitches so as to slide in skin from the preputial flaps and thus cover the whole of this raw area with epithelium, part of which will ultimately line the new urethra. It is well to pass a stitch through the glans so as to hold the organ straight before passing the sutures. The first of these (Fig. 4, *b*) is placed so as to pick up the point of the shrunken urethra; the next (Fig. 4, *b'*) passes through the skin on one side, takes a hold on the fibrous tissue of the raw area, and finally emerges through the skin on the opposite side; the remaining sutures are passed similarly, the flaps being brought as far towards the orifice of the urethra as can be done without puckering. It will usually be found that the points *c c* (Fig. 4) will be sutured to the raw surface, just below the stitch which has been passed through the glans. The appearance when all these stitches have been passed is seen in Fig. 5. On the lateral aspect of the glans there is still a line along which the epithelium is not united, and this should now be done by a row of sutures (Fig. 6). This completes the second stage of the operation, and when the wounds have healed it will be found that the penis is perfectly straight and considerably broader, especially in the region of the glans.

*Stage 3.*—At least another three months should be left before commencing this stage of the operation, which is carried out almost exactly as in Duplay's operation. A soft rubber catheter is passed into the urethra and stitched to the middle line of the glans (Fig. 7, *a*); this steadies the organ and facilitates the rest of the operation. An incision is made on either side of the urethral channel, extending into the connective tissue, which is then sutured around the bougie by a row of stitches (Fig. 7, *b*); the skin is closed over this by another row of stitches (Fig. 7, *c*). At the anterior part care should be taken to make the incision run slightly outwards, so as to make the floor of the urethra slightly longer than the roof; this allows for shrinkage.

The operation is now finished, and the appearance of the penis is that of an organ which has been circumcised, leaving a rather redundant mass of tissue below the frenum (Fig. 8). If everything heals satisfactorily the operation is completed, except that there will usually be a few rather unsightly tags of skin at the side of the glans, which can be clipped away if desired; but this should never be done until sound union has been obtained, as these tags will prove extremely valuable if it should be found necessary to perform any further plastic operation for closing a fistula. Fistulæ most commonly occur either at the junction of the body of the penis with the glans or just in front of the scrotum, and they are best closed in the manner shown in Figs. 10, 11, and 12. An incision is made round the fistula in the manner shown in Fig. 10, in which it will be noticed that the incision is not symmetrically placed in regard to the fistulous opening, but is well to one side, so that a flap is raised, which can be turned over the opening and sutured in position (Fig. 11) The free edge of this flap should be distinctly longer than the fistulous opening, so as to allow for shrinkage and for the insertion of sutures. When the flap has been fastened in position a raw surface is left, which is closed by sliding in a curved flap, as marked out in Fig. 11, the whole being sutured into position. This flap will usually be composed of the redundant tissue on one side of the glans, which will now present the appearance shown in Fig. 12. In the case of fistulæ at the root of the scrotum double flaps are cut as before, but the second flap is derived from scrotal tissue.

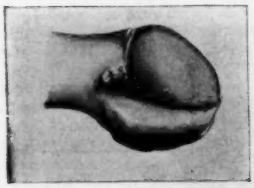
As regards suture material I have always employed fine chromicised catgut, except in the case of the final skin sutures, for which I have used horsehair. The parts are extremely delicate and friable, and it is therefore necessary to use fine

FIG. 7.



The third stage of the operation. *a*, Catheter stitched into meatus. *b*, Deep sutures (catgut). *c*, Superficial skin sutures (horsehair).

FIG. 6.

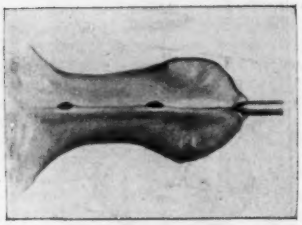


Lateral view of Fig. 5.

FIG. 8.

The completed operation. The arrow points to the urethral orifice

FIG. 9.



To show the most common position in which fistulæ form.

FIG. 10.

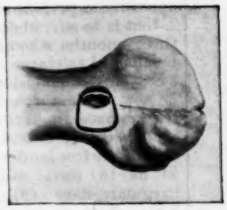
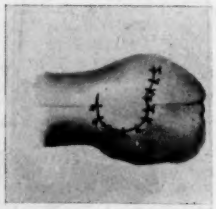


FIG. 11.

FIG. 12.



FIGS. 10, 11, 12.—Method of closing a fistula.

needles, preferably ordinary sewing needles or curved intestinal needles. Accuracy in suturing is, of course, indispensable, but it is equally important to get a good hold on the skin flap, so that the stitches will not cut out when they are moistened with urine. As regards dressings, strips of moist boric lint wrapped round the organ and changed as often as they are soiled with urine are probably the most satisfactory, and are certainly the most comfortable for the patient. I have not found any particular advantage in keeping a catheter tied in to prevent the passage of urine over the wound. An instrument tends to set up urethritis and to keep a certain amount of tension on the stitches; furthermore, it does not always succeed in keeping the wound dry, as urine is apt to leak by the side of it.

The operation can be performed at any time after the age of 3, but it is certainly easier when the boy is older, as the parts are larger and simpler to handle. In the cases which I have completed the results are extremely satisfactory. The urine is passed freely and projected forwards in a satisfactory stream, the straightness of the organ being all that could be desired. The new lining of the urethra, as seen in those cases in which a fistulous opening formed, seems to have taken on the character of mucous membrane. I have now operated on five cases; two are completely healed, one has a fistulous opening which remains to be closed, and in two the third stage has not yet been attempted; in all, however, the straightness of the organ is entirely satisfactory.

Queen Anne-street, W.

## ON A CASE OF ADDISON'S DISEASE IN A BOY AGED TEN YEARS.[1]

BY FREDERICK LANGMEAD, M.D. LOND., M.R.C.P. LOND.,

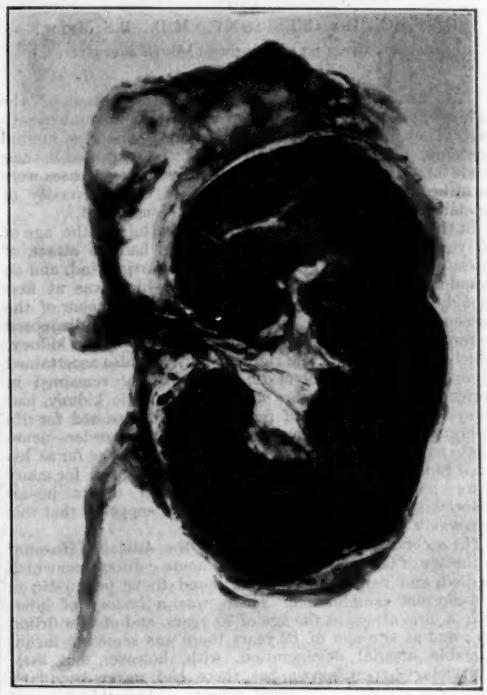
ASSISTANT PHYSICIAN TO THE ROYAL FREE HOSPITAL; THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET; AND THE SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), GREENWICH.

DEFINITE cases of Addison's disease in children are without doubt very rare. In the annals of the Hospital for Sick Children, Great Ormond-street, no record appears of a post-mortem examination on a patient who had been the subject of this disease, nor is there any clinical record of a case in which the symptoms were convincing enough to make the diagnosis more than questionable. Comby has collected 21 cases in children, and Dezirot 48 cases in children under 16. Of these, only 6 were under 10, the majority being in the eleventh and fifteenth years of life. Osler records an example of the disease occurring congenitally. Monti was able to find records of 11 cases in children from 3 to 14 years old. The disease in children would appear to produce symptoms very similar to those occurring in adults. Although protracted cases are described, a greater proportion run a very acute course in children. Apparently the pigmentation is usually less obvious than in the majority of adult cases, although, as is well known, a few of the latter show little or no darkening of the skin or mucous membrane. Death from convulsions and coma would appear also to be relatively more frequent in children and death from asthenia relatively less. According to Gerhardt convulsions are seen in two-fifths of the cases in children. Netter describes a case in a child, aged 4 years, who was suddenly taken ill with vomiting, diarrhœa, and depression, and died in three days.

The following case has many interesting features. The patient, a boy aged 10, was admitted to the Royal Free Hospital on Sept. 17th, 1912, at 6 A.M., and died four hours after admission. On the evening before, vomiting had started abruptly, accompanied by restlessness, and followed by loss of consciousness. On admission he was seen to be unconscious, the elbows, wrists, and knees being rigidly flexed, and the fingers extended. The temperature was subnormal and the pulse rapid and weak. The abdomen was retracted. The knee-jerks were present, and the plantar response was flexor. Frequent convulsive seizures occurred until death.

The case gave rise to much conjecture as to its nature, and remained undiagnosed until the post-mortem examination. A possible explanation appeared to be meningitis, but the rapidity of its course was against this view. Moreover, the optic discs were normal, and cerebro-spinal fluid withdrawn by lumbar puncture showed no abnormality beyond absence of reducing power. The possibility of uræmia was excluded by the fact that a catheter specimen of urine was normal. Acetone was not present, an observation which excluded "cyclical vomiting" from the diagnosis. The pigmentation amounted to no more than a slight diffuse brownness of the skin, including that of the abdomen, and would not give rise to comment in a child of the poor at the end of the summer. Later it was learnt by careful questioning of the mother that the pigmentation had been noticed to have gradually deepened for about 12 months, and that the boy had been subject to attacks of diarrhœa for "several months," and had been slowly getting weaker. The boy's father had died from phthisis ten years before, and two aunts and one uncle of his mother also died from the same disease.

*Necropsy.*—The body was that of a somewhat wasted boy, the skin showing slight general pigmentation without maculæ.



From a photograph of one kidney and suprarenal gland showing the advanced stage of the fibro-caseous change. The other was similarly affected. (Photograph by Miss Katherine Wortham.)

The suprarenal glands were fibro-caseous, almost throughout, merely a narrow margin of healthy gland tissue being discernible, and this only in a few areas (see figure). The fibrosis had spread into the adjoining posterior abdominal parietes, and must have involved the sympathetic ganglia, though these were not recognised. Caseous glands were found in the portal fissure and two caseous foci in the lowest lobes of the lungs, near the roots, probably representing glands also. Microscopically the tuberculous nature of the process was apparent. Many large giant cell systems and tubercle bacilli were seen. There was very considerable overgrowth of the lymphatic structures. The thymus, tonsils, lymphatic patches of the tongue and intestine, and the mesenteric glands were all hyperplastic, as in status lymphaticus. The spleen was considerably enlarged, reaching well down into the abdomen almost to the umbilicus, and weighing 5 oz. The pancreas, thyroid, thymus, spleen, and pituitary body

[1] The specimen was shown at the Medical Society of London on Jan. 27th, 1913.

were examined microscopically, but showed no abnormal change in their structure.

An especially interesting feature was the small size of the heart, which weighed only 3 oz. Its smallness attracted attention immediately after removal of the sternum and ribs, and it resembled in size more the heart of a child of two or three years old. This is only what is to be expected, considering the low degree of blood pressure which the boy must have had for some considerable time. It can, I think, properly be regarded as a true hypoplasia due to the little work which the heart was called upon to perform. In adults atrophy of the heart has often been described, but I have not encountered a description of cardiac hypoplasia in Addison's disease in children.

Queen Anne-street, W.

# POLYCYSTIC DISEASE OF KIDNEYS:

## REMARKABLE PERSISTENCE OF FUNCTIONS IN TWO CASES IN ADULTS.

BY H. RISCHBIETH, M.A., M.D., B.C. CANTAB., F.R.C.S. ENG.,

AND

C. P. C. DE CRESPIGNY, M.D., B.S. MELB.,

PATHOLOGIST, ADELAIDE HOSPITAL, SOUTH AUSTRALIA.

THE two following cases of polycystic disease of the kidneys appear to be of sufficient interest to warrant recording. They offer contrasts in their clinical histories, morbid anatomy, modes of exitus, and it might be suspected in their mode of origin. The clinical histories of these cases were furnished by Professor A. Watson, of the University of Adelaide, by whom their publication was suggested.

In the first case the patient, a male, attained the age of 26 years without a symptom. He then had an attack of intestinal obstruction of a subacute and partial kind, and on examination a tumour was revealed, which was at first thought by his medical attendant to be a tumour of the descending colon. The tumour was subsequently diagnosed as renal, and on operation proved to be a polycystic kidney, which was removed. The right kidney was also ascertained at operation to be polycystic. The patient remained in perfect health for six years with one polycystic kidney, had no symptoms suggestive of renal disease, was passed for life insurance, and died from an independent disorder—acute septic meningitis secondary to otitis media, and as far as his renal functions were concerned might have lived for many years more. He showed an associated defect in an abnormality of the heart, and it might be supposed that this case was "congenital" in origin.

The second case was admitted into the Adelaide Hospital at the age of 62 years suffering from acute colitis, from which he died, and both kidneys were found to be polycystic on post-mortem examination. There was a history of gout, with a first attack at the age of 30 years, and of beer drinking; and at the age of 62 years there was some not inconsiderable arterial degeneration, with, however, but little ventricular hypertrophy; but there had never been any symptoms suggestive of renal disease. And this type of case, if any, might perhaps be considered to have been "acquired." No facts upon the point of family or hereditary relationships could be obtained in either case; for no relatives could be traced. The kidneys of these two cases are shown in the accompanying figures.

CASE 1.—The patient, a man aged 27 years, was sent to the Adelaide Hospital by his medical man at Port Pirie as suffering from tumour of the descending colon.

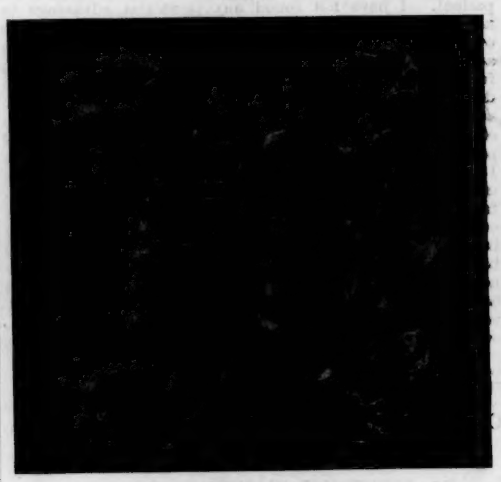
*History.*—Fourteen days previously the abdomen became distended and the patient was unable to pass anything by the bowel. After enemata he passed flatus and was somewhat relieved. No vomiting. On the third day of illness a lump was observed by the medical man in the left side below the ribs. It caused no pain, but was somewhat tender on palpation. The patient vomited once on the fourth day. The bowels were not opened for the first seven days; after this they were regular. The motions at first contained a little slime and blood. Appetite fair; no jaundice. He had never had any pain suggestive of renal colic, nor any trouble with his urine. This had never been noted to be blood-stained or to contain "gravel."

*Previous illnesses.*—Ruptured since 13 years of age; had always worn a truss. "Catarrh of bowels" four months previously. Left pleurisy two years previously. Slight traces of plumbism (had been working as a smelter for six months). No syphilis.

*Physical examination on admission.*—Temperature, 99·3° F.; tongue moist, furred; breath offensive; pulse-rate 76, of medium volume and tension. On the buccal surface of the lower lip, on the left side in the region where the incisor teeth came into contact with it, there were several sloughy ulcers; these were painful. The lip was swollen and the gums were soft and congested. No physical signs in heart or lungs. In the left side of the abdomen, immediately below the costal margin, a distinct, smooth, hard, rounded, oblong tumour could be felt, lying in the flank. The fingers could be got below this tumour but not above it. It was easily felt bimanually, was fairly fixed, did not move appreciably on respiration, was defined clearly internally, and was slightly tender on palpation. Intestine could be made out anterior and internal to it. No abnormality could be detected on the right side of the abdomen. Urine acid, 1008, clear, pale; contained a faint trace of albumin, no sugar, and no deposit.

Two days after admission this tumour, the left kidney, was removed. It was completely cystic. Its maximum measurements were 12 by 6 by 3 in., and it weighed 5¼ lb. A photograph, taken after nearly seven years in spirit, of this kidney, marked 1905, is reproduced. (Fig. 2.) On operation (Nov. 16th, 1905) the right kidney was also recognised as much enlarged and polycystic. There were no cysts in the liver or spleen, both of which were examined.

FIG. 1.



Case 1.—Right kidney polycystic.

FIG. 2.

Case 1.—Left polycystic kidney.

The patient was shown at a meeting of the South Australian Branch of the British Medical Association 14 days after operation, and discharged to convalescent home 11 days later. His weight was then much increased (it had increased by 5 lb. in the last week). He was then passing on an average 97 oz. of urine of low specific gravity (1002) in the 24 hours.

The patient had to be readmitted four days later by reason of an attack of pneumonia, from which he eventually recovered. The urine

then had a specific gravity of 1010, and contained a faint trace of albumin. Seven days later the quantity had averaged 50 to 70 oz. in the 24 hours, was acid, 1008, contained a faint trace of albumin, no sugar, and no deposit. Owing to the fact that the lumbar drain had been removed too soon (i.e., two days after operation), the scar of the lumbar stab-drain incision gave way on the nineteenth day after re-admission, and an abscess was evacuated. Subsequent progress uneventful.

The subsequent history of this individual was as follows. He remained in good health for some six years, and was during this time passed for life insurance, the scar of the abdominal incision having escaped observation. Some six years later, however, he was readmitted to the Adelaide Hospital suffering from acute septic meningitis, secondary to otitis media, from which after operation he died. The urine then had a specific gravity of 1015, and contained a fair cloud of albumin.

*Necropsy.*—A complete post-mortem examination was performed. The post-mortem findings, apart from the cause of death, septic meningitis secondary to otitis media, were comparatively unimportant from our point of view and need be only summarised here, with the exception of the abdominal contents. Thus, adhesions along the posterior border of the left lung, congestion of both lung bases, undue patency of the tricuspid valve of the heart which admitted five fingers, an abnormal band,* like a chorda tendinea, passing transversely across the right ventricle from wall to wall (apparently some modification of a moderator band), *left ventricle hypertrophied.*

*Abdomen.*—Scar posteriorly (drain scar) over left kidney region; another, linear, over left rectus muscle. The liver was enlarged (weight proved to be 70 oz.) and pushed forwards and to the left, the gall-bladder being situated in the left hypochondrium; the stomach and duodenum were also pushed over to the left, while the omentum was adherent to the parietes of the left side at the site of the abdominal incision. The liver was adherent to the upper pole of the right kidney, from which it could only be separated with ease by section; slightly softer than normal; no gall-stones; pancreas normal. The right kidney was enormously enlarged and semi-fluctuating; it pushed all the neighbouring organs to the left; it contained a mass of cysts of varying size and consistency, some as large as a tennis ball and others as small as a pea. It weighed 5¼ lb. The pelvis of this kidney was somewhat dilated, but the ureter proper was not dilated. The urinary bladder, which contained a good deal of urine, was not dilated. The right suprarenal gland, which was somewhat larger than normal, was pasted on to the anterior surface of the upper pole of the kidney.

(The photograph of this kidney, marked 1911, is reproduced for comparison with its fellow, marked 1905. (Fig. 1.) A good deal of shrinking has occurred owing to the prolonged immersion—more especially of the 1905 specimen—of these viscera in preserving fluids, probably an inch or more in the longest diameter.)

It is stated that *the nutrition of this body was good*, and this may be regarded as an indication that the general health of this individual had suffered little from the deprivation of one polycystic kidney, and that the energies of the remaining one were capable of maintaining the general health, at least for a long period. Upon the subject of heredity or family factors in this case nothing can be ascertained, for no relatives can be traced.

CASE 2.—The patient, a man aged 62 years, was admitted to the Adelaide Hospital on July 14th, 1910.

*History.*—The patient had been quite well until 15 days previously. He then had an attack of severe abdominal pain; it extended from the right hypochondriac to the left iliac region. The attack lasted several hours. From one to two hours after the onset of pain vomiting and diarrhœa began. Next day pain was less severe, but diarrhœa was worse, and it continued until admission to hospital. A good deal of tenesmus; no observation as to characters of motions, but he did not think he had passed blood in them. Vomiting occurred daily, several times a day. Characters of vomit: Dark yellow at first, black for last three or four days; very offensive. He suffered much from weakness, and thought he had lost much weight. He had taken a few glasses of beer before the present attack; no dietetic error other than this.

*Habits and previous illnesses.*—The patient had been a heavy drinker 20 years ago, and still occasionally broke out. Smoked fairly heavily—¼ lb. weekly. Had suffered from gout in 1908 (when he was in Adelaide Hospital), and possibly since 30 years of age. Had had one or two previous attacks like the present, but they were slight and only lasted an hour or so. No other illnesses.

*Family history.*—Married, 8 children, 5 dead. First and third children normal, second stillborn; one died, aged 14 months (enteritis); three died a few hours after birth. The fourth and fifth were premature. Wife in good health until just before birth of last child, when she had a paralytic stroke and died, aged 45 years.

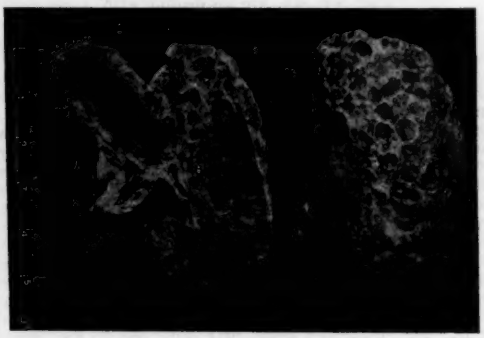
*Physical examination.*—A thin man of poor general nourishment. Prostration marked. Tongue coated and dry; teeth very foul; marked pyorrhœa alveolaris. Temperature subnormal; pulse 120, of small volume, medium tension. Arterial wall very much thickened. Respirations 22. Heart's apex beat impalpable; by auscultation it appeared to be situated in the sixth left space 1 inch internal to the nipple line. No area of cardiac dulness. Heart sounds rather weak; otherwise normal. Lungs emphysematous. Abdomen: No distension or rigidity; slight tenderness in the right hypochondrium; liver, slightly enlarged downwards to 1 inch below the costal margin. Motions: Pea-soup stools containing reddish flocculi and a very little mucus. Death in coma. Urine: No note.

* If this is to be regarded as a *congenital* abnormality the fact of its association with another congenital defect, polycystic kidneys, seems of some interest from the point of view of the study of associated congenital defects, as well as from the aspects of this case at present under consideration. Associated malformations are noted as common in congenital polycystitis.

*Necropsy.*—General nourishment poor. Heart: The mitral valve was slightly incompetent, admitting three fingers. There was slight atheroma of the valves, coronary arteries, and aorta, and much fibrosis of the radial artery. The lungs showed old fibrosis, some calcareous patches at each apex, and some emphysema.

*Gastro-intestinal tract.*—The mucous membrane of the cæcum was congested and roughened, and showed submucous hæmorrhages; no ulceration. There were roughening and slight granulation of the mucous membrane of the colon with submucous hæmorrhage except in the sigmoid; no ulceration. The liver showed some fibrosis, but this was not extensive; there was no thickening of the capsule. Some fatty degeneration and some suggestion of cloudy swelling. The pancreas was fibrotic, but otherwise normal. There were some old adhesions about the appendix attaching it to the right kidney, and there was some

FIG. 3.



Case 2.—Polycystic kidneys.

scarring of the mesentery. Both kidneys were large, polycystic, and the renal substance was diminished. (Fig. 3.) Both suprarenal glands were normal.

Thus the cause of death was exhaustion and coma, in acute colitis. The polycystic condition of the kidneys appears to be an independent association. Or is it to be regarded as a terminal infection in a chronic uræmic state? Or are we dealing, perhaps, with chronic interstitial nephritis in addition, in a gouty beer-drinker? Or is the polycystic degeneration the result of this chronic inflammatory condition? Except for size and for the fact that the perirenal fat is increased and that there is proportionately more renal tissue, the kidneys of this case much resemble those of Case 1. The vessels are small and show little thickening of their walls or atheromatous degeneration. Nothing can be ascertained upon the subject of possible heredity or family factors in the case, for here again no relations can be traced.

The following points with regard to the macroscopical appearances of the kidneys of these cases should be stated. In Case 1 the pelvis in both is enlarged commensurate with the great size of these kidneys; but there is, otherwise, nothing to suggest dilatation. Neither ureter is dilated. The vessels are in no way enlarged and there is no increase of pelvic fat. The capsule strips without any difficulty. In Case 2 the pelvis is not perceptibly dilated in either; neither ureter is dilated. The pelvic fat is somewhat increased. No abnormality in the vessels can be observed. The arteries are small, very little thickened, and not atheromatous. The capsule strips with very slight difficulty, but this is not greater than is not infrequently seen in the kidneys of individuals of this age (62 years) which are not regarded as morbid.

The points of interest in these cases appear to be:—In Case 1: (*a*) The age, 26 years, at which the condition first became manifest. If this condition was congenital in origin, as is to some extent suggested by the fact that this patient showed what appeared to be a congenital abnormality of the heart as well, it is perhaps remarkable that kidneys of this size and degree of cystic degeneration should not have caused symptoms, renal or other, earlier in life. (*b*) That the first symptom produced was intestinal obstruction; this, however, is not very surprising, considering the size to which these tumours had attained. (*c*) That one kidney of the type here shown should be capable of maintaining the renal functions and warding off symptoms of renal insufficiency for some six years and maintaining perfect health. This individual was passed for life insurance having only one kidney, and that polycystic, and appeared to be in

good health up to the time that one of the complications of otitis media carried him off. (*d*) Again, the age is peculiar when statistics of published cases are considered, for it is unusually old or unusually young.

The points of interest in the second case appear to be:—(*a*) The age, 62 years, to which this individual attained with kidneys such as those shown without suffering symptoms suggestive of renal disease. This, however, is not uncommon in this condition. (*b*) The problem, Was the acute colitis from which this man died a terminal infection in a chronic uræmic state, or an independent condition? For the evidence of uræmia was very slight. (*c*) The possible part played by gout in the causation of the polycystic degeneration of the kidneys in this case. That is to say, Are we dealing with a *congenital* condition in a man, aged 62 years, the result, let us say, of embryonic failure of union between secreting and conducting parts of the kidney (which has, however, given rise to no symptoms for so many years)? Or is the condition acquired, the effect of, let us say, fibrous proliferation around the tubules, exudation into them, or cicatrisation after nephritis, causing obstruction of the urinary passage (as Morris suggests), and possibly in this case the effect of gout? Any of these causes might cause a polycystic condition such as these kidneys show. (*d*) If the acute colitis from which this man died was a terminal infection in a uræmic state, are we to regard the latter as that of the last stage of polycystic disease or degeneration of the kidney? Or is it to be considered as that of chronic interstitial nephritis, of possibly gouty origin, affecting a kidney already polycystic? (*e*) Or is the condition, *in toto*, one of polycystic degeneration of a granular kidney? There is no note of the condition of the urine. But since the urine may have much the same characters in all the above conditions, its diagnostic value here would not be great. These kidneys show little indication of chronic interstitial nephritis in fibrotic changes, and do not resemble any specimens of cystic granular kidney that one has seen. Further, the arteries are rather small, very little thickened, and not atheromatous. The hypertrophy of the left ventricle was very slight, arterial tension not very markedly increased, and the degree of atheroma and arterial degeneration that was present not more than would be fairly often seen without symptoms in an individual of this age who, like this man, had been a manual labourer all his life. Therefore the hypothesis that chronic interstitial changes, the effect of gout, may have played a leading part in the causation of the polycystic disease of these kidneys must be abandoned. They would seem to be examples of "polycystic degeneration," whether they be congenital in origin or arise from some unknown cause occurring in adult life.

The appearances, macroscopical and microscopical, the clinical features and types of cases, duration of life, frequency and sex incidence of polycystic disease of the kidney, have been very fully described. It is not proposed here to describe anew the structural features as shown by the kidneys of these two cases. But in order to place these in their proper groups a summarised review of the literature seems advisable. For it is in the pathogenesis, at present wrapped in obscurity, and in the clinical features, one and another, of cases that the chief difficulties seem to be.

*Frequency.*—Garceau quotes Preitz, of Kiel, who found 16 cases of polycystic disease of the kidneys in 10,000 necropsies, or 0·16 per cent. In the records of the Boston City Hospital (1896 to 1906) there were 10 cases in 2429 necropsies, or 0·041 per cent.

*Age incidence: that is, time when first observed.*—Senator[1] states: "The condition may be seen in the fœtus—i.e., it is congenital—the chief feature of importance being difficulties which it causes in parturition." To this well-known condition Morris,[2] Bland-Sutton,[3] and Garceau[4] also refer in their accounts, which agree in all points. Garceau quotes Boinet and Raybaud, who give a list of 35 cases in infancy of ages from full term to six months of age. Garceau and Senator both state that the disease is more commonly one of middle life, and most cases occur during the fifth decade. (Whether the condition, then, is congenital or acquired is difficult to decide) (Senator, Garceau.) Bland-Sutton, on the other hand, appears to regard all cases in the adult as congenital in origin, while Morris appears to regard cases in adults as acquired. Before the third decade the condition is very rare (Senator). It seldom occurs between infancy and 21 years (Garceau). Senator quotes Luzzatto on this point; the latter observer found only two cases developing between the tenth and twentieth years out of 187 cases. Garceau quotes Seiber, who in 173 cases found the age incidence as follows: Third decade, 26 cases; fourth decade, 22; fifth decade, 67; sixth decade, 40; seventh decade, 10; eighth decade, 6; ninth decade, 2.

*Sex incidence.*—Senator and Morris state that in adults the condition is commoner in males—"a little more than half." Garceau, on the contrary, states that women are more frequently affected than men, and quotes Seiber, who found, in 138 cases in which the sex was stated, 116 females and 82 males. In the operative cases he states that this proportion is much higher. Thus Seiber found in 70 cases in which an operation had been performed 60 women and 10 men. Albarran and Imbert found in a series of cases 35 women and 10 men.

*Unilateral or bilateral?*—Nearly always bilateral. Senator quotes Lejars, who found the condition to be unilateral in 1 case out of 60, and Luzzatto whose figures were 41 out of 226.

According to Garceau, there is some preference for the left side, for Seiber in 9 unilateral cases found this to be the left side in 6, and in 46 cases operated upon the figures were 28 left and 18 right.

Hereditary and family cases have been reported by Steiner and Höhne, amongst others.

*Association with other malformations.*—All observers refer to the frequent association of polycystic kidneys with congenital malformations of various kinds: anencephaly, talipes, spina bifida, atresia of prepuce, imperforate urethra, cleft palate, polydactylism, absence of limbs, imperforate anus, absence of bladder, occlusion of ureters, absence or occlusion of pelvis of kidney, double vagina or uterus, &c. The polycystic condition of the kidneys is also frequently associated with a similar cystic condition of the liver. Senator quotes the figures of Lejars, who found the liver affected in 17 of 60 cases, and those of Luzzatto, which were 19·1 per cent.

*Pathogenesis.*—Some authorities regard *congenital* cystic kidney as an altogether different condition from the polycystic condition of the adult. Of these, Morris appears to be one. Bland-Sutton, on the other hand, appears to regard them as the same. Senator remarks, however, that the manner in which cyst formation occurs is as obscure in the one case as the other. Garceau regards the condition in the adult and in the infant as having the same pathogenesis, though the conditions show features which are dissimilar at the two ages, and in the adult in some cases the cysts do not date from fœtal life.

The following theories now hold the field: (1) The process is one of new growth, an adenoma or adenocystoma, just as are the hepatic cysts sometimes found in association with polycystic kidneys. This view is held to be supported by the fact that islands of hyaline cartilage have been found (by von Mutach) in the stroma of a renal cyst. This favours the theory of tumour formation and is analogous to the islands of hyaline cartilage found in testicular adenomata, which develop in close proximity to the kidneys (Senator).

(2) The cysts arise from obstruction of the urinary passages. This was Virchow's view. The obstruction is not to be looked for in the larger urinary passages, from the pelvis downwards—for this is usually absent, and, when present, produces hydronephrosis, except when the obstruction develops late in fœtal life—but is due to occlusion by fœtal inflammation of the lower urinary tubules, such as the collecting tubules by concretions, uric acid, calcareous infarction, proliferation of fibrous tissue around the ducts or exudation into them, atresia of papillæ, due to embryonic papillary nephritis or pyelonephritis, for example. With this view Morris appears to agree, for he states that whether they occur in the fœtus or in the adult the cysts are due to

[1] Professor H. Senator: Nothnagel's Encyclopedia of Practical Medicine, American edition, 1905, vol. vii., pp. 366–76.
[2] Sir Henry Morris: Polycystic Disease; General Cystic Degeneration of the Adult Kidney. Allbutt and Rolleston's System of Medicine, second edition, 1908, vol. iv., Part I., pp. 712–16.
[3] J. Bland-Sutton: Tumours, Innocent and Malignant, fifth edition, 1911, pp. 586–93.
[4] E. Garceau: Renal, Ureteral, Perirenal, and Adrenal Tumours, &c., of the Kidney, London and New York, 1909, pp. 222–53.

obstruction from some such cause as the above. But none of these changes have been found in every case, and therefore the following view is held:—

(3) That the obstruction is due to arrested or maldevelopment of the kidney. The frequent association with other malformations is held to support this view, as well as the fact that hereditary and family cases have been recorded. This arrest might prevent junction between uriniferous tubules and pelvis being established. Ribbert holds that since the kidney develops from two anlagen—(*a*) the urinary portion (cortex and glomeruli) and (*b*) the conducting portion (the straight tubules)—failure of the parts connecting these (namely, the convoluted tubules) to develop would cause cyst formation, and that these cysts are of two kinds—those of the glomeruli and those of the extremities of the collecting tubules. In adults, at any rate, the retention is produced by chronic interstitial inflammatory processes in the region of the pelvis, calyces and medullary portion, leading to distension and obliteration of the uriniferous tubules (Senator, Morris, Garceau).

(4) The theory of maldevelopment or arrested development with subsequent new growth upon this (Garceau).

*Clinical classification of cases* (Senator). *A. In the fœtus.*—This condition causes difficulty in parturition, stillbirth or death soon after birth from interference with the action of the diaphragm or from complications from the other malformations.

*B. In the adult.*—Group I.: A total absence of symptoms. Death from other causes and polycystic disease of the kidneys only revealed at necropsy. Group II.: Cases showing symptoms of renal disorder—i.e., urinary symptoms, but these not characteristic of any definite condition. Group III.: In these there is a renal tumour. In Lejars's figures there were only 18 such out of 62 cases. (Senator.) In most cases the enlargement of the kidneys is insufficient for it to be detected during life.

*Characters of the swelling.*—This resembles hydronephrosis, but is usually bilateral. Fluctuation less usual, and the condition is usually bilateral.

*Pain.*—This, the most prominent feature of the second stage, may be slight or severe, present or absent. Very occasionally there are paroxysms like those of renal colic. (Senator.)

*Characters of the urine.*—This is variable and may be (*a*) normal in quantity and composition, (*b*) scanty and of low specific gravity, (*c*) occasionally neutral or alkaline, (*d*) abundant, with or without albumin, or containing blood or rosettes resembling leucin.

Other observers have divided the condition into stages: thus Stages I., II., and III. But this is not a practical division clinically, even if it be correct, for the reason that most cases do not appear to follow "stages" in any way that can be discovered during life. "Œdema is occasional, cardiac hypertrophy usual, and the case may resemble one of chronic interstitial nephritis" (Senator). "Urœmia is the usual termination." "The general condition may remain undisturbed or may deteriorate." "Cachexia is occasional, but fever rare" (Senator). "The course extends over years, but lacks uniformity in different cases." "Among the complications are: suppuration of cysts, calculus, hydronephrosis, and tuberculosis" (Garceau). "The onset is insidious and duration over years" (Senator, 20 years; Lejars, 15 years).

Our second case falls into Group I., and our first case into Group III., of the clinical classification of cases suggested by Senator. And the maintenance of good health in this case for six years with only one such kidney seems the more remarkable, since it is stated by authorities (e.g., Senator) that by the time the tumour is obvious the course is usually comparatively short, for the reason that so little renal tissue is by that time left for work.

Adelaide.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.—A course of four lectures on the Physiology of Vision and Colour Vision will be delivered by Dr. F. W. Edridge-Green on Wednesdays, at 5 P.M., beginning Feb. 19th. The lectures will be illustrated by experiments and demonstrations. They are free to qualified medical men on presentation of their card.

## NOTE ON A CASE OF
# CHRONIC INTERNAL HYDROCEPHALUS.

BY JAMES RAE, M.A., M.D. ABERD.,
ASSISTANT MEDICAL OFFICER, PARK HOSPITAL FOR CHILDREN, HITHER GREEN.

THE finding of a clot in the torcular herophili in association with hydrocephalus has apparently not been recorded, and the fact may justify an account of such a case.

The patient, a boy aged 4 years 10 months, was the tenth of a family of 13. The father was healthy; the mother "had a cough" and had been an out-patient at a chest hospital for several years. Three children died from wasting and "consumption of the bowels"; one from convulsions, one from diphtheria, and one was stillborn. The patient himself was subject to convulsions during his first year. He began to take notice and to talk at about the usual age, and had measles and whooping-cough. Shortly before his fourth birthday he seemed to become stupid, and at this time his parents thought his head was enlarging. He was admitted to Lambeth Infirmary on Dec. 14th, 1911, and transferred to the Park Hospital for Children, Hither Green, on Nov. 27th, 1912. On admission his head measured 22¾ in. in circumference, and the anterior fontanelle 2¼ in. laterally. The chest had marked rickety deformities, with an angular projection on the ninth rib of each side just outside the nipple line. The arms were spastic and the hands clenched. The frontal and the right angular veins were very prominent, and when the child cried the external jugular veins became half an inch in diameter. On the evening of admission signs of pneumonia appeared on the right side, subsequently extending. Death took place on the tenth day after admission.

*Necropsy.*—A post-mortem examination was made 24 hours after death. The right lung was in a state of red hepatisation; the lower lobe of the left lung showed a few scattered tubercles. Four bronchial and two mesenteric glands were enlarged and caseating, the largest being ⅝ in. in diameter. No other tuberculous foci were seen in the body. There were no pleural adhesions, and not more than 2 drachms of clear yellow fluid in the pericardial cavity. When the meninges of the brain were opened a large quantity of clear fluid escaped, and continued to drain away when the brain was removed. The cerebrum weighed 31½ oz., and when opened out measured 13⅜ in. from edge to edge. Its cortex was ⅛ in. thick, and the corpus callosum ½ in., the fornix being a mere film. The cornua of the lateral ventricles had the following depths: posterior, 1½ in.; anterior, just under 1 in.; lateral, only ¼ in. The cerebellum, medulla, and pons together weighed 3¼ oz. The veins of the cerebellum and those passing through the right foramen cæcum were much enlarged and tortuous. The Sylvian veins also were distended, particularly on the right side. The lateral sinuses measured 1 in. in diameter, the occipital sinus ⅜ in. at its posterior end, and the internal jugular veins ¾ in.

The torcular herophili contained a pyramidal blood clot, lying with its apex towards the straight sinus. When fresh the clot weighed just under ¼ oz., was 1⅛ in. high, and 1 in. across its base. Its outer surface was a dark golden yellow, except for a deep crimson layer at the base, 3/16 in. deep. The cut surface was visibly laminated, deep pink in the centre, growing paler towards the periphery.

This clot is now in the Museum of the Royal College of Surgeons of England, and Mr. S. G. Shattock has kindly sent me the following report on it: "As viewed in section the clot is at one pole of a bright red colour; the rest, and by far the chief portion, is devoid of colour, and has a flexible, finely sponge-like character. Histologically the uncoloured portion consists of a somewhat open felt or tangle of fibrin filaments. Scarcely any red cells are present in the meshes, but a moderate number of polymorphonuclear leucocytes and lymphocytes are distributed through it. There is no free blood pigment. The red end of the clot consists of recent blood, but this merges into the structure just described, the number of red cells diminishing in the meshes of the fibrinous stroma, until practically none are to be encountered. There are no vessels in any part of the coagulum, and no fibroblasts—i.e., no organisation is in progress."

As has been stated above, no similar case appears to have

been recorded. D'Astros,* in the section of his monograph which deals with venous obstruction, does not mention the formation of such clots. Browning† has reported the discovery of an organised thrombus, ½ in. long, lying in the straight sinus, with another in the longitudinal sinus (? superior or inferior) in a less advanced condition. His patient was a girl aged 6, who died three months after hydrocephalus was first observed.

Hither Green, S.E.

## THE ACTION OF SCHARLACH R UPON X RAYED SKIN.

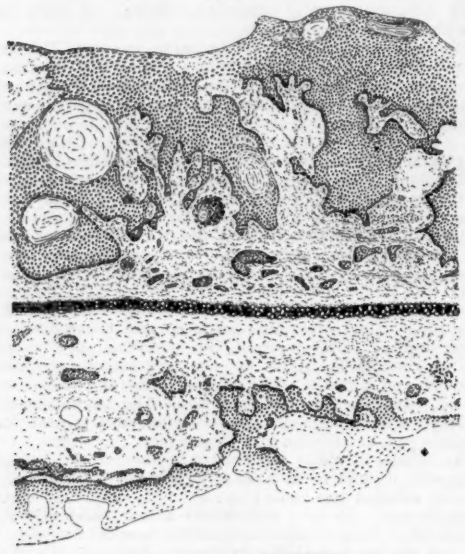
BY J. O. WAKELIN BARRATT, M.D., D.SC. LOND.

*(From the Cancer Research Laboratory, The University, Liverpool.—Mrs. Sutton Timmis Memorial.)*

IN previous communications the condition of mitosis in epithelium caused to proliferate by the action of Scharlach R[1] has been studied, and also the course of events following upon implantation of such epithelium.[2] The present paper deals with the effect of injection of Scharlach R into the skin of the ear of the rabbit exposed, 2 to 15 months previously, to the action of X rays. In such cases the full destructive effect of the X rays has been produced and the skin has again passed into a stationary condition.

It will be of advantage to study first the change produced by Scharlach R in the X rayed skin of the ear when the amount of destruction effected by the action of X rays has not been sufficient to produce complete disappearance of all the appendages of the skin. These changes are illustrated in Figs. 1 to 4,[3] which are made from two rabbits (A and B) similarly treated. The changes induced by the action of X rays in these two rabbits were of long standing, having been set up 15 months previously, so that at the time of injection of Scharlach R about 80 per cent. of the hairs had disappeared from the portion of the ear X rayed, those remaining being free from pigment, and shorter and finer than those present before the application of X rays. The skin of the ear was thinner than normal, pale and smooth, presenting a somewhat scarred aspect and exhibiting irregular areas of increased pigmentation alternating with areas nearly free from pigment. These changes were more marked on the outer aspect of the ear than on the inner.

FIG. 1.

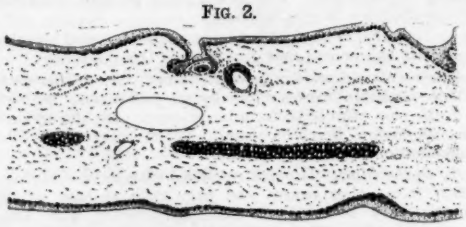



*(The scale of Figs. 2 and 5 is the same as that of Fig. 1.)*

Section of ear of rabbit A, exposed to the action of X rays 15 months previously. Scharlach R dissolved in olive oil was injected beneath the skin of the outer surface of the ear and later a portion of the injected area was removed for sectioning. Considerable epithelial proliferation has occurred chiefly, but not exclusively, in the epithelium of the outer surface of the ear. Both surfaces are irregular. The nuclei of the cutis vera are increased in number. The upper border of the section represents the outer surface of the ear and the lower border the inner; placed nearly centrally the cartilage of the ear is seen. × 30.

On microscopic examination of the X rayed skin before the injection of Scharlach R (Figs. 2 and 4) it was found that a marked degree of destruction of the hair follicles had occurred. This was greatest in rabbit A (Fig. 2). The hair follicles remaining were diminished in diameter and in length, the former change affecting chiefly the deeper portion of the follicles, which were not unfrequently converted into thin cord-like structures. Most of the papillæ of the hair follicles had disappeared, and, as a rule, hair shafts were absent. In the upper part of the follicles a lumen was present containing epithelial scales, the accumulation of which sometimes caused distension of this part of the follicle. In the lower part of the follicle, in most cases, no lumen was recognisable and the follicle appeared to be solid, being made up of small prickle cells. The mouths of the hair follicles were observable as large openings, usually filled with loose horny epithelium. Sometimes the horny epidermis at, or just below, the mouths of the hair follicles had accumulated to such an extent as to give rise to epithelial collections reaching a millimetre or more in diameter. The sebaceous glands had in part disappeared. The hair follicles were more affected on the outer surface of the ear than on the inner. The surface epithelium shown in Fig. 2 is of about the normal thickness, but is pigmented to an excessive degree. The cutis vera, owing to the small size and number of hair follicles, is thinner than normal, and appears to be made up to a greater extent than usual of connective tissue. The blood-vessels are less numerous than usual; in consequence of this the cellular elements of the corium are fewer than usual.

FIG. 2.



Section of ear of rabbit A, exposed to the action of X rays 15 months previously. The portion of the ear represented lies close to that from which the previous section has been made, but is outside the area injected with Scharlach R. The hair follicles have been, for the most part, destroyed by the action of X rays. The surface epithelium is markedly pigmented, especially on the outer aspect of the ear. A large vein is seen above the cartilage, which does not extend completely through the section. This section should be compared with that given in Fig. 1. × 30.

In rabbit B (Fig. 4) the destruction of the hair follicles is less marked. It is little evident in the skin of the inner surface of the ear (lying below in the figure) in which the hair follicles mostly contain hair shafts of fair size, but in the outer skin of the ear the hair follicles are affected to a greater degree, fewer hair shafts being seen. The epithelial distension of the mouths of the hair follicles referred to above is exhibited in a marked degree. The surface epithelium differs from that in Fig. 2 in not being pigmented to an excessive degree. The number of cells in the corium is not diminished to the same extent as that in the previous animal.

The injection of Scharlach R into the skin of the rabbit's ear, exposed, as above described, to the action of X rays in

* D'Astros: Les Hydrocéphalies, Paris, 1898.

† Browning: New York Journal of Nervous and Mental Disease, 1887, vol. xiv., p. 260.

[1] J. O. Wakelin Barratt: On Mitoses in Proliferating Epithelium, Proceedings of the Royal Society, 1907, Series B, vol. lxxix., p. 372.

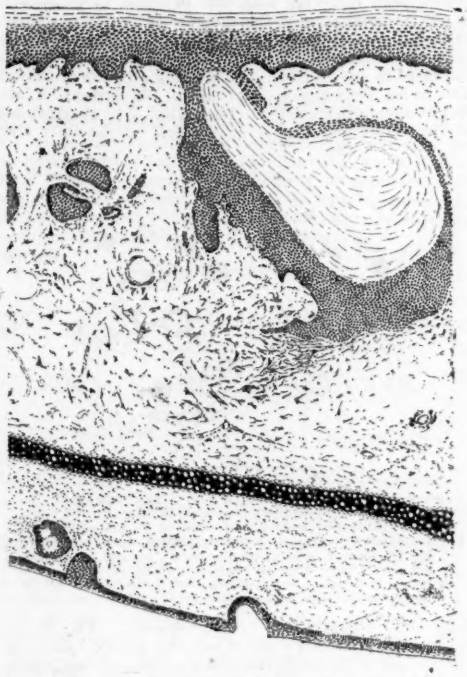
[2] J. O. Wakelin Barratt: Implantation of Actively Proliferating Epithelium, ibid., p. 548.

[3] The tissues from which the sections were made were hardened in Zenker's solution and stained by Heidenhain's iron-alum hæmatoxylin method or with thionin and orange G.

amount sufficient to cause partial destruction of the hair follicles, is followed by an extreme degree of epithelial proliferation such as occurs in the normal epithelium of the rabbit's ear similarly injected. In such cases the ear gradually increases in thickness at the site of injection, proliferation of the horny layer takes place, adherent white scales appearing on the surface. At the end of 10 to 14 days the skin of the ear may present a warty character, resembling that often exhibited by surface epithelium. When the horny epidermal accumulations are removed a moist, irregular surface is exposed; complete removal of the epidermic scales is, however, difficult, for plugs may pass downwards into the proliferated prickle layer, portions of which may be torn off in the course of attempted removal of the horny epidermal accumulations.

On microscopic examination of the section obtained from rabbit A (Fig. 1) it is seen that an extreme degree of proliferation of the rete Malpighii and of the prickle layer of the hair follicles has taken place, the proliferation being of two kinds: (1) a simple more or less regular increase in the

FIG. 3.

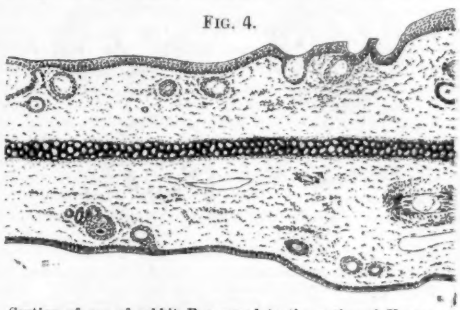


Section of the ear of rabbit B, exposed to the action of X rays 15 months previously. Scharlach R was injected beneath the skin of the outer surface of the ear, and 14 days later a portion of the injected area was removed for sectioning. Marked epithelial proliferation and an increased production of connective tissue are seen in the upper part of the section, which corresponds to the outer aspect of the ear. In the lower part no marked change is observable. × 30.

number of epithelial cells; and (2) an irregular downgrowth or outgrowth of epithelium, produced under the influence of adjoining globules of oil containing Scharlach R in solution and strikingly resembling that seen in epithelioma. The epithelial proliferation is marked on both sides of the central cartilage of the ear, but is more marked in the skin of the outer surface of the ear (upper surface in the figure) than in that covering the inner surface. The proliferation of the epithelial covering of the inner surface of the ear was caused by some of the solution of Scharlach R[4] injected into the connective tissue lying upon the outer surface of the cartilage passing into the connective tissue covering the inner surface of the cartilage. (In rabbit B it will be seen that this did not occur.) The enlargement of the lumen of the mouths of the hair follicles is obviously due to the very large general increase of the prickle epithelium and not to pressure from within due to an accumulation of horny scales, although such accumulation does occur to some extent. No hair shafts are seen in the section.

In the section obtained from rabbit B (Fig. 3) the epidermal proliferation is confined to the skin covering the outer surface of the ear, the whole of the Scharlach R injected lying external to the cartilage of the ear, whereby its action was prevented from extending to the inner surface (lower surface in the figure). In this section marked increase of the epithelium of the surface and of the mouths of the

FIG. 4.

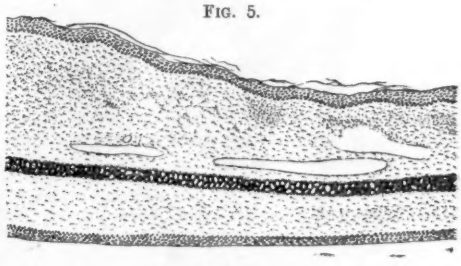


Section of ear of rabbit B exposed to the action of X rays 15 months previously. The portion of the ear represented lies close to that from which the previous section has been made, but is outside the area injected with Scharlach R. The hair follicles are destroyed to a less extent than is the case in the section represented in Fig. 2. The destruction is greater in the outer skin of the ear (lying above the cartilage) than in the inner. This section should be compared with that given in Fig. 3. × 30.

hair follicles is observable. One of the latter has undergone very considerable enlargement, the mode of origin of which will be understood on reference to Fig. 4, taken from the adjoining part of the ear free from Scharlach R, which may therefore be taken to represent the condition of the ear before injection. In the latter figure it will be observed that the empty mouths of the hair follicles are, as already mentioned, of large size, though the follicles themselves have become in part atrophied or destroyed. The enlargement of the former, when it occurs, is therefore all the more striking. In this section, as in that shown in Fig. 1, a few sebaceous glands of small size can be recognised. It should be observed that injection of Scharlach R does not cause the appearance of proliferation in the cells of the sebaceous glands.

If Scharlach R is injected into the ear of a rabbit which has many months previously been subjected to severe

FIG. 5.



Section of ear of rabbit subjected to severe X raying 67 days previously. Ten days before the portion of tissue, from which the section is made, was excised a small amount of Scharlach R was injected into the subcutaneous tissue between the outer skin and the cartilage. A moderate degree of epithelial proliferation has occurred as the result of the injection. Note that the hair follicles and sebaceous glands have been completely destroyed. The cutis vera is abundantly supplied with cells which are distributed irregularly and tend to form localised collections. × 30.

X raying, then a result is obtained which differs in some respects from that above described. If the skin of the ear has been sufficiently X rayed, all the appendages of the skin are destroyed, and the corium, which is sometimes thinner than normal, sometimes of somewhat increased thickness, containing a fair number of nuclei, is found to be made up

[4] Dissolved in olive oil.

of fibrous tissue covered externally by a uniform layer of epithelium, generally thicker than that observed in the normal condition (that is to say, 40$\mu$ to 50$\mu$ thick, the usual thickness being about 25$\mu$). The condition of such X rayed skin is comparable to that of deeply scarred skin.

After the injection of a small amount of Scharlach R into such X rayed skin proliferation of the surface epithelial covering is observed to the extent represented in Fig. 5. In its character this epithelial increase is similar to the surface

FIG. 7.

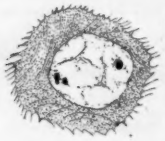


FIG. 8.

FIG. 6.

FIG. 9.

FIG. 6.—Normal prickle cell from Fig. 2. For comparison with the cell shown in the succeeding figure. × 1000.

FIG. 7.—Prickle cell from proliferating epithelium shown in Fig. 1. The cell generally is enlarged, both nucleus and cytoplasm being of more than the normal dimensions. The prickles, which are prominent, are thinned and drawn out, the prickle spaces being correspondingly increased in size. In the cytoplasm some indications of the epidermal fibres are recognisable. × 1000.

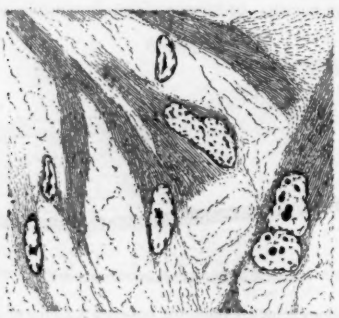
FIG. 8.—Prickle cell from the proliferated epithelium shown in Fig. 1, exhibiting fragmentation of the nucleus into three parts. × 1000.

FIG. 9.—Mitotic figure from the proliferated epithelium shown in Fig. 1. The chromosomes, more or less oval in form, are about 30 in number, and are arranged upon the equatorial plane of a spindle (not shown in the figure). × 1000.

increase seen in Figs. 1 and 3. It does not, however, progress much further than is shown in Fig. 5, owing to the fact that the effect of the injection of more than a relatively small amount of Scharlach R is to cause necrosis. The fact brought out by the injection in such cases is, that Scharlach R, as would be expected from the results previously obtained, is still effective when its action is exerted exclusively upon skin exhibiting only surface epithelium, the appendages of the skin having completely disappeared.

The degree of X raying just described represents the limit available for experimental work, the stage beyond being that

FIG. 10.



Portion of cutis vera of Fig. 3 more highly magnified. Lying upon and among the connective tissue bundles (unstained) are numerous flattened cells, the cytoplasm of which is thin, lightly stained, and spread out upon the connective tissue fibres. × 650.

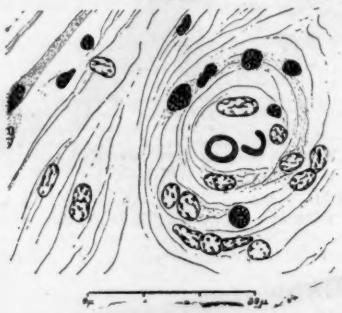
in which the surface epithelium is broken and sloughing may result. It is, however, difficult to carry out experimental work upon skin of the type shown in Fig. 5, even when the immediate effect of X raying has long passed off, for such skin remains in a condition of lowered vitality and is readily affected by injurious influences.

A marked feature of the action of Scharlach R upon the skin of the ear of the rabbit, subjected many months previously to the action of X rays, is its tendency to cause necrosis, even though the degree of X ray injury may not exceed that shown in Figs. 2 and 4. Blistering of the surface is readily produced, a crust forms, and the area of skin injected may pass slowly into a condition of dry gangrene. Should this occur a line of separation appears at the edges of the injected area, and ultimately the necrotic portion is shed, the ear showing a large hole when healing is complete. Suppuration does not occur, nor is any acute inflammatory process observable. The animal does not scratch the ear, and seems quite unconscious of the occurrence of any morbid process.

The tendency to sloughing is obviously related to the degree of destruction of the epithelial appendages of the ear. Even with slight degrees of X rays, the injection of large amounts of Scharlach R is likely to be followed by vesiculation, while in old X rayed ears in which severe changes have been produced it is difficult to avoid vesiculation, even though only a small amount of Scharlach R is injected. In consequence the opportunities of studying changes in the latter case are somewhat limited.

The characters of the changes in the proliferated epithelial cells following upon the injection of Scharlach R in old X rayed skin of the rabbit's ear are also similar to those following injection into normal skin. The proliferating cells of the prickle epidermis and of the hair follicles are increased in size, the increase affecting all parts of the cells. The nuclei generally measure about 12$\mu$ instead of about 9$\mu$ in normal prickle cells. (Figs. 6 and 7.) Fragmentation of the nuclei into two or more parts, not however always

FIG. 11.



Portion of cutis vera of Fig. 3 more highly magnified. To the right a blood capillary is seen containing two red blood cells, in optical section. In addition to the endothelial nuclei and the nuclei of the connective tissue, which are lightly stained, several smaller darkly stained free nuclei are seen, chiefly disposed round the capillary vessel. The connective tissue is unstained, but the situation of the larger elastic fibres is partly indicated. × 500.

completely separated, is not uncommon. (Fig. 8.) The prickles are unusually distinct and the prickle spaces large. Indications of the epidermal fibres are more or less obtrusive. (Fig. 7.) Mitosis, which is fairly common, is characterised by the appearance of short oval chromosomes; these resemble those in the reduced division of epithelial cells already described.[5] In Fig. 9, which illustrates their appearance, about 30 chromosomes are present. I have not observed rod-like chromosomes in the sections made. In many of the mitoses the chromosomes were not sufficiently separated from one another to enable the type to be identified. The cells of the sebaceous glands disappeared after the injection of Scharlach R. No pigmented cells were visible, after injection, in the proliferated epithelium of rabbit A, though prior to injection of Scharlach R these were present in considerable numbers. (Compare Figs. 1 and 2.)

In the cutis vera, after the injection of Scharlach R into old X rayed skin, the connective tissue was found to be increased in amount (compare Figs. 1 and 2; also Figs. 3 and 4); the nuclei of the cutis vera were much more numerous than before injection. Among the latter large flat cells were obtrusive in rabbit B (Figs. 3 and 10), less so in rabbit A. These exhibited well-defined large nuclei and darkly stained cytoplasm forming thin prolongations, often branched, lying upon and between the connective tissue

[5] Loc. cit., p. 375.

fibres (Fig. 10). In addition to these, large nuclei, similar to the preceding, but not obviously flattened and not surrounded by any clearly defined cytoplasm, were common among the connective tissue fibres and in the neighbourhood of the blood-vessels (Fig. 11). Nevertheless, the number of free cells lying around the blood-vessels was much less than had been observed when the healthy skin of the rabbit's ear was injected with Scharlach R. Smaller nuclei, with relatively abundant chromatin, staining more darkly than the preceding (Fig. 11), are also met with in considerable numbers lying between the connective tissue bundles and also around blood-vessels; the cytoplasm of these nuclei could not be defined; multinuclear leucocytes were unfrequent. The blood-vessels of the cutis vera were diminished in number in proportion to the destructive effect of the X rays. Some increase in the number of blood-vessels, limited in degree, took place after injection of Scharlach R, the increase being greater the more vascular the skin was at the time of injection. The liability of the X rayed skin to vesiculation and sloughing after the injection of Scharlach R is presumably related to the abnormal structural character of the cutis vera. Mitoses of the somatic type are occasionally met with in the cells of connective tissue. Mast cells are sometimes encountered, but pigment cells appear to be absent.

*Summary.*

1. In old X rayed skin of the rabbit's ear the injection of a solution of Scharlach R is followed by epithelial proliferation, which may reach an extreme degree, provided the destructive effect of the X radiation has not been excessive.

2. A marked tendency to sloughing is observed when Scharlach R is injected into old X rayed tissues, the tendency being greater the more marked the extent to which the appendages of the skin have been destroyed.

Liverpool.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

*Exhibition of Clinical Cases and Pathological Specimens.*

A MEETING of this section was held on Jan. 24th, Mr. A. H. TUBBY, the President, being in the chair.

Dr. ANNE L. J. KANN showed for Mr. DUNCAN C. L. FITZWILLIAMS a case of (?) Fibro-lipoma. It was that of a boy aged 2 years and 8 months. On examination there were four small swellings, distinct from one another, on the back of the arm and in the axilla. They felt fibrous, some being larger than others. The axilla was filled with a mass about as large as an orange, which bulged forward the anterior axillary wall and appeared in front under the pectoral muscles. It was firm, with well-defined edges and slight lobulation. It was moveable on the structures beneath and under the superficies. There was no impulse on coughing or crying. The child was very backward and undersized, with marked signs of rickets. The fontanelle was still open.

Dr. ANNE KANN also showed for Mr. FITZWILLIAMS a case of Lymphangioma resembling Hernia of the Lung. It was that of a boy aged 6. The mother had noticed that something was wrong with the right side of his neck when he cried. She stated that she noticed this vaguely when she was washing the child, and she could recall it as far back as 12 months ago, but she took little notice of it until it began to get larger during the last three months. In November the child got whooping-cough, and this lasted until the end of December. During this time his mother noticed that the lump got very large in his neck during the spasms of coughing. On examination there was a fulness of the root of the neck above the right clavicle and behind the sterno-mastoid muscle. It was ill-defined and quite soft, and small nodules could be felt in it. It seemed to disappear under the fingers towards the region of the subclavian artery. On coughing or straining the root of the neck filled up and bulged in a prominent manner, and on palpation the tumour again subsided. Though breath sounds were heard they were probably transmitted. The condition at first sight was extremely like a hernia of the apex of the right lung, but there was no indrawing on deep inspiration, nor could any ring be felt in the deep part of the neck. The diagnosis was that the condition was an extensive lymphangioma with large loculi, the greater portion of the tumour being situated in the chest.

Dr. R. C. JEWESBURY showed cases of two similar but somewhat unusual heart conditions in sisters. 1. Aged eight. The mother was told by her doctor that this child's "heart was affected" when she was three weeks old. The child was not cyanosed at birth and had never been noticed to get blue. She had suffered from dyspnœa on exertion for the last three to four years, and had complained of growing-pains during the last two years. There was no history of acute rheumatism. The heart was enlarged, its apex beat being in the sixth space in the nipple line. There was a systolic murmur at the apex conducted out. The second sound was accentuated. In the second and third left space a loud, rumbling murmur, partly presystolic and partly systolic, was heard, and a well-marked thrill was felt in this position. At the pulmonary area a systolic murmur was present, conducted upwards to the neck. Aortic sounds: first sound soft, otherwise normal. 2. Aged 10 years. No heart disease was ever suspected until she was brought to hospital a few days before. She had always been a healthy child. There was no history of rheumatism; the heart was not enlarged. In the second and third spaces a well-marked systolic thrill was felt, and over this area a prolonged, continuous, booming murmur was present, very similar to that heard in her sister's case.

Mr. R. C. ELMSLIE showed three cases of an unusual form of Disease of the Hip-joint—"Calvé's Pseudocoxalgie." 1. A boy, aged 10. In November, 1909, he fell and twisted his right foot, and attended an out-patient department for a week and recovered. About three weeks later he was kicked on the right hip, which was noticed by the mother to be much bruised; from that time he limped and had occasional pain in the knee, especially after lying down. He had no pain at night. In the following March he came to the hospital. At that time the hip movements were free, except full hyper-extension; the limb was $\frac{3}{8}$ in. shorter than the left, the shortening being above the great trochanter; there was little wasting of the thigh. A skiagram showed that the acetabulum was clear and smooth, but that the epiphysis of the head of the femur was a little flattened, its surface uneven, and its upper edge proportionately thicker than it should be; the neck of the femur appeared shorter and thicker than the normal. He was kept in bed for three weeks, and the condition did not alter. He was then allowed up. A fresh skiagram taken in May showed no alteration. After this he was kept under occasional observation until February, 1912, during which time the condition did not alter appreciably. Subsequent skiagrams showed no important change, although the flattening of the epiphysis and the thickening of its upper border became rather more evident. 2. A boy aged 8. The parents in this case had not noticed anything wrong, but were informed after a school medical inspection that the boy limped. He was brought to the hospital in January, 1912. At that time there was a little limitation of the abduction of the right hip-joint, most marked in the flexed position; other movements were free. The shortening was very slight, not more than $\frac{1}{4}$ in., and there was a little wasting in the thigh. A skiagram was taken, and the appearances were found practically identical with those in the last case. The parents were then informed that no treatment would be necessary. These two cases agreed as to clinical signs and skiagraphic appearances with Calvé's description, but neither was observed in the acute stage described by that author. The third case presented, however, some differences. 3. A girl aged 9. At the beginning of 1912 this child had an attack of St. Vitus's dance and rheumatism in the right leg. In the summer she was an in-patient for St. Vitus's dance at a hospital. She was transferred to a fever hospital for diphtheria in August. While convalescent of the attack of diphtheria she was noticed for the first time to limp, but she had at this time no pain or disability. When she returned from a convalescent home the mother noticed the limp, and brought her to St. Bartholomew's Hospital in December. No injury to the hip could be remembered. The right hip was kept flexed, further flexion was free, extension

was limited, abduction abolished, and rotation in both directions limited. The limb was ¾ in. shorter than the left, this shortening being above the great trochanter. A skiagram showed the head of the femur to be deformed in much the same way as in the previous cases, but in addition the upper part of the acetabulum was eroded, and the head of the femur displaced a little upward; the femoral neck was short and thick. This case differed from the first two and from those described by Calvé in the changes in the acetabulum and in the partial upward dislocation.

Dr. J. WALTER CARR showed a case of Congenital Syphilis with enlargement of the liver and spleen. It was that of a girl aged 12. No definite family history of syphilis could be obtained, but the patient was the third child, and her mother had two miscarriages between the births of the second and third children. The girl was born at full term, and there was no evidence that she had any symptoms suggestive of syphilis during infancy. She was in hospital in March, 1911, for syphilitic disease of the soft palate, with pain and difficulty in swallowing. When shown, the uvula was destroyed and the remains of the soft palate were adherent to the posterior wall of the pharynx; there was a perforation on the left side of the palate communicating with the left nostril. The liver was much enlarged, reaching nearly to the umbilicus; it was hard, smooth, and not tender. The spleen was also enlarged and hard, extending about 3 inches below the costal margin. There was no albumin in the urine. There was a slight thickening of the middle third of the right tibia. The eyes were healthy. The report on the blood was as follows: Total red corpuscles, 3,750,000; total white corpuscles, 6500; polymorphonuclear neutrophiles, 61·8 per cent.; polymorphonuclear eosinophiles, none; mononuclears, large 18·7 per cent., small 19·4 per cent. Two nucleated red cells were seen in counting 350 white cells. Hæmoglobin, 100 per cent. Wassermann reaction strongly positive. Lately the child had got thinner and had complained of loss of appetite and diarrhœa.

Dr. CARR also showed a case of Hirschsprung's Disease in a boy aged 9. He was treated about six years ago for severe constipation. Since then he had always been more or less constipated, requiring a great deal of purgative medicine. He was admitted to hospital on Jan. 10th, and for six weeks previously his bowels had only been opened by injections. A number of very hard scybalous masses were felt in the hypogastric region; these had been removed by enemata, but there had been no spontaneous action of the bowels. The boy looked fairly healthy. The abdomen and the lower part of the chest were greatly enlarged, and the increased length between the ensiform cartilage and the umbilicus was very marked. The whole abdomen was very tympanitic, and there was marked visible peristalsis. The liver, spleen, and heart were all much displaced upwards, the heart's apex beat being in the third left space. The rectum appeared to be normal.

Dr. CHARLES W. CHAPMAN showed a case of Arteriosclerosis with absence of both radial pulses in a girl, aged 15. She was admitted to hospital on Nov. 20th, 1912. She complained of cough and orthopnœa on exertion or exposure to cold. There was rheumatism on the mother's side. No special illness until four years ago, when she suffered from loss of power in the legs, with loss of speech, the attack lasting 15 minutes. There were several similar attacks during the following six months. Bronchitis two years ago. She was said to have had chalky lumps on her abdomen last summer. When first seen the area of cardiac dulness was increased in both directions, that on the left side being 9 cm. beyond the mid-sternal line; the apex beat was in the sixth space at the extreme margin of the dulness. The finger-tips were slightly congested. Catamenia not commenced. Teeth very bad. On admission the cardiac dulness was as stated; the subclavians were visibly pulsating, and aortic pulsation could be felt by the finger in the aortic notch, the brachial and radial arteries were hard and devoid of pulsation, the iliac arteries were visibly pulsating, but only feeble pulsation could be felt at the left posterior tibial and not at all on the right; the apex beat was in the sixth space and the action cantering. The liver was enlarged. Urine: specific gravity, 1022; albumin, a trace; sugar absent; no casts or red blood cells. Wassermann negative. Since admission the child had gained weight and had generally improved; the cardiac dulness was diminished, and she could lie down in comfort. There was still a cloud of albumin. The skin on the abdomen was dusky, but no cyanosis or blanching was present.

Mr. SYDNEY STEPHENSON showed a case of Interstitial Keratitis and Osteo-periostitis of the Tibiæ treated with neo-salvarsan. It was that of a boy aged 6. Ten years ago the mother was affected with some nasal trouble, for which she was treated. One child, born prematurely at the seventh month, died when aged 7 weeks from some cause unknown to the mother. There had been no miscarriages or stillbirths. Nine or ten months ago the patient was said to have suffered from "rheumatic pains" in the backs of the hands, shoulders, both knees, and both legs. Just before last Christmas the father noticed a film over the child's right eye, and then found that he could only tell day from night with the affected eye. The patient was admitted to hospital on Jan. 9th last. When admitted he showed no signs of syphilis as regards his face, cranium, or teeth. The inguinal and cervical glands were slightly enlarged and "shotty" to the touch. The skin was in a state of xeroderma. Nodes were present on the middle third of each tibia, being more marked on the right side. The overlying skin was not discoloured, and the swellings themselves were not tender. There appeared to be the remains of a similar node about the middle of the right ulna. The Wassermann reaction was positive. In the right eye there was a trifling ciliary redness and photophobia. The pupillary area of the cornea showed a disc-like interstitial opacity, while the peripheral parts of the cornea were almost clear. The anterior epithelium covering the opacity looked as if it had been breathed upon. The pupil, although the eye was being treated with atropine (2 gr. to the ounce, three times a day), was no larger than 4 mm. It was probably fastened down by posterior synechiæ. Tension normal. Vision, perception of light. On Jan. 20th, 1913, neo-salvarsan, 0·6 grm., was injected intravenously with beneficial effect.

Dr. J. D. ROLLESTON showed specimens of Congenital Renal and Ureteral Anomaly. It occurred in a boy aged 12. Death took place from generalised paralysis, following very severe faucial and nasal diphtheria, on the forty-seventh day of the disease. There were violent attacks of abdominal pain during the last 24 hours of life. Albumin was present in the urine from the third to the thirty-eighth day. The first specimen showed (1) solitary or asymmetrical left kidney, 4¾ in. long, 2 in. broad, 1¼ in. thick, 6 oz. in weight; (2) duplication of ureter, the upper branch, 4 in. long, supplying the upper third, and lower branch, 3½ in. long, supplying the lower two-thirds of the kidney. The second specimen showed union of the two branches of the left ureter 3 in. from the bladder, the left ureteral orifice in the bladder, and a right ureter which was pervious from the bladder to its blind upper extremity. The right kidney, renal artery and vein, and right suprarenal were absent.

Dr. G. A. SUTHERLAND and Mr. H. W. PERKINS showed a specimen of Non-development of Cerebrum. The case was that of a female child aged 9 weeks. The head resembled that of a normally developed infant of this age, the circumference being 13⅛ in. The anterior fontanelle was widely open, measuring 2 in. in the sagittal direction and 1 in. in the coronal. The sutures were not united. On opening the skull a quantity of blood-stained fluid escaped, amounting to 9 oz. On centrifuging this the blood cells were thrown down, leaving a clear supernatant fluid of a straw colour. The dura mater appeared to be normal and the falx cerebri was fully developed and present throughout its whole length. The hæmorrhagic fluid present was apparently in the cavity of the arachnoid. This cavity was partially divided in the occipital region by a few fine, cobweb-like adhesions, present chiefly on the left side. The brain, lying on the base of the skull, was very small and covered with thickened, œdematous-looking pia-arachnoid, which concealed its outline. On the removal of this membrane it was seen that the brain was extremely ill-developed as regards the cerebral lobes. The brain weighed 80 grm. Each cerebral hemisphere measured 9 cm. in length, 6 cm. in width, and 3·7 cm. in depth, taking the maximum measurements. The two halves of the dwarfed cerebrum on each side of the falx cerebri were roughly symmetrical, except that posteriorly into the occipital lobe on the left side a large hæmorrhage had taken place, the clot being recent and unorganised. The middle third of the cerebral cortex

on each side presented numerous convolutions, which, although small and narrow, were separated by well-defined sulci. The anterior parts of the cortex were extremely thinned and so intimately associated with the pia-arachnoid that it was difficult to recognise any well-marked convolutions or sulci. The appearance here was that of numerous small cavities, like a honey-comb, bounded externally by the thinned cortex and pia-arachnoid. Definite convolutions and sulci were present at the posterior pole on the right side, whilst on the left side the posterior pole was the seat of the extensive hæmorrhage referred to above. This hæmorrhage formed a roughly spherical clot about 25 mm. in diameter, limited externally by the thinned-out cortex and pia mater, and suggesting from its appearance the possibility of its having arisen from bleeding into a thin-walled cyst. The basal surface of the cerebral lobes presented a crinkled appearance, well-defined convolutions and sulci being absent. The cerebellum, medulla, pons, and peduncles presented a normal appearance. All the cranial nerves could be identified, and the blood-supply and blood-vessels were normal so far as could be determined. A transverse section through the right cerebral lobe at the level of the corpus callosum showed that the lateral ventricle was slightly distended, and that the ependyma and choroid plexus were normal. The brain substance beneath the ependyma had a spongy, reticulated appearance, and in the floor of the ventricle, beneath the lining membrane, was a small cavity about the size of a pea filled with blood-clot. The left ventricle was but slightly enlarged. The foramen of Monro was patent and normal. The third and fourth ventricles were not enlarged, and the patency of the "iter" was established. The cortex of the mesial aspect of the cerebrum, when cut into, showed numerous small spaces about the size of a hemp seed. The baby was shown at the November meeting of the section.

Dr. HUGH THURSFIELD and Mr. H. W. SCOTT read a paper on a case of Sub-aortic Stenosis.

Dr. F. G. CROOKSHANK read a paper on Mongolism.

## SECTION OF ANÆSTHETICS.

*Use of Nitrous Oxide and Oxygen in Major Surgery.*

A MEETING of this section was held on Feb. 7th, Dr. J. BLUMFELD, the President, being in the chair.

Mr. H. M. PAGE read a paper on the use of Nitrous Oxide and Oxygen in Major Surgery. A revival in recent years of the interest taken in anæsthesia was attributed to Dr. Crile's work on shock. The recent work done in America was acknowledged, the object of the paper being to suggest further investigation of these agents on this side. The difficulties of the administration if the surgeon was not to be hindered in his work, the strain on the anæsthetist, the cumbrous apparatus and expense, were pointed out. Against these drawbacks were placed the non-toxicity of $N_2O$, the few after-effects, and the good condition of the patient at the end of the operation when compared with the other general anæsthetics. It was maintained that this favourable condition was found to exist in a proportionately modified degree even when ether had been added all the time. Regulated rebreathing was strongly advocated, Mr. Page having found that his patients were none the worse for it, and the administration facilitated. The work of the physiologists on the subject of the loss of $CO_2$ and acapnia was mentioned, and especially the recent work of Yandell Henderson, and it was maintained that account must be taken of it and rebreathing carefully used even if all Henderson's conclusions were not ultimately agreed to. Ninety-four major operations were brought forward, 51 having been intraperitoneal operations. The ages of the patients varied from 5 to 81 years. Seven out of these 51 intraperitoneal cases died. All of these were desperate cases which were being given the last chance. They died a few hours or days after the operation. None died immediately. The special indications for the method were said to be: 1. Desperate cases from toxæmia or traumatism or hæmorrhage, if spinal anæsthesia was not used. 2. For operations on diabetics. It was to be preferred to spinal anæsthesia or any general anæsthetic. 3. In certain genito-urinary operations. A previous injection of a narcotic with atropine was recommended, and failing this atropine alone. Induction was recommended to be always done with the addition of ether, and afterwards to return to the addition of ether to get the depth of anæsthesia required rather than to push the $N_2O$ by increasing pressure. It was stated that a tendency to cessation of respiration without toxicity and possibly due to loss of $CO_2$ might be met with and also a true toxicity. The most important contra-indications were advanced degeneration of the heart and vessels, a marked degree of emphysema and dyspnœa, or obstruction to the air-way. Deaths said to be due to the anæsthetic had been reported. Mr. Page's opinion was that these dangers and deaths could be avoided by the unremitting attention of a skilled anæsthetist who had seen his case beforehand and deliberately chosen this method, and that $N_2O + O_2$ with or without the addition of ether would then give the patient in certain cases an additional chance of recovery. Mr. Page then gave a demonstration of Dr. Teter's apparatus, recommending that a bag should be added close to the face-piece, also a simple arrangement he had had put together which answered fairly well and was portable. It was stated that all apparatus must allow of rebreathing being used.

The PRESIDENT considered that Mr. Page had made out a good case for the use of gas and oxygen, and for rebreathing, at least in very dangerous cases. He had himself in a few cases used gas and oxygen where it was essential to avoid any toxic effects, and in those his experience agreed with that of Mr. Page. It was difficult to reconcile the avoidance of the asphyxial element with the view that no diminution must be allowed in the $CO_2$ content of the blood.

Mr. H. BELLAMY GARDNER said that in 1897 he brought forward the use of gas and oxygen for minor operations—i.e., those not involving abdominal section, and in the following year Mr. Herbert Paterson used it for a case in an operation lasting 1 hour and 55 minutes. Later he (Mr. Gardiner) related his experiences with it for larger operations, but still excepting abdominal sections. It was many times more expensive than the older general anæsthetics, but was particularly indicated for diabetics, in which case it was the most valuable anæsthetic available.

Dr. H. DES VŒUX spoke highly of the anæsthetic in some of his patients whose condition demanded the greatest possible care, and testified to the rapid recovery of consciousness and the lack of unpleasant after-effects.

Mr. H. E. G. BOYLE asked Mr. Page as to the relaxation of abdominal muscles when gas and oxygen was the anæsthetic. When no other narcotic was given beforehand, and no ether added to the gas and oxygen, he found it difficult to procure such relaxation, but no doubt it was easier to procure if these additions were made to the gas and oxygen. He agreed that it was the best anæsthetic for diabetics, and had given it in three such cases with success for amputations at or about the knee. He did not advise it for rectal operations because of the spasm and opisthotonos that occurred.

Mr. C. J. LOOSELY had used the apparatus (Dr. Teter's) in six cases, all children, with success. In one case, however, he had to use a little ether to keep up the relaxation of the muscles.

Mr. ASLETT BALDWIN had the highest opinion of this anæsthetic for major surgery, especially when the patient was already partly poisoned by diabetes or sepsis. For rectal work he got over the difficulty of the opisthotonos by placing the patient on his side and trussing him up with a jack towel.

Dr. A. L. FLEMMING (Bristol) exhibited a simplified apparatus of his own design and manufacture for giving gas and oxygen, which allowed of rebreathing.

Mr. PAGE replied.

## SECTION OF OPHTHALMOLOGY.

*Exhibition of Cases.—The Physiology of Intraocular Pressure.*

A MEETING of this section was held on Feb. 5th, Sir ANDERSON CRITCHETT, the President, being in the chair.

Mr. G. COATS showed a case of Congenital Mesoblastic Strand adhering to and penetrating the Cornea. He suggested that if in early fœtal life the amniotic fluid was not sufficiently developed or was too scanty, the amnion might come into contact with eyes which were prominent at the time, and might acquire adhesion to the developing eye.

Dr. A. RUGG GUNN showed a case of Persistent Hyaloid Artery with massive white formation obscuring the optic disc.

Dr. A. S. COBBLEDICK showed a case of Congenital Deformity of the Inner Canthus.

Mr. J. B. LAWFORD exhibited a case of disease in the region of the pituitary body. He believed the lesion exerted pressure on the chiasma; the patient showed no definite evidence of acromegaly; he had loss of sexual power, and was very drowsy.—Mr. R. W. DOYNE alluded to the prognostic importance of ascertaining the colour fields beforehand.—Dr. T. GRAINGER STEWART pointed out that the patient had the two other features associated with the condition to which Cushing drew attention—namely, general pallor, and a long distance between the ear and the corner of the eye.

The PRESIDENT showed a patient on whom he had performed peritomy because of choroido-iritis, the whole of the vascular conjunctiva having been very much thickened.—Mr. T. H. BICKERTON (Liverpool), Mr. R. R. CRUISE, and Dr. RAYNER D. BATTEN referred to the good results sometimes yielded by the operation, as in this case.

Dr. MARTIN FLACK, in resuming the debate on the Physiology of Intraocular Pressure,[1] criticised the schema submitted to the last meeting by Professor E. H. Starling, as it did not take account of any capillary bed and the resistance due to it; thus the conditions obtaining in the eyeball were not adequately represented. Moreover, to substitute rubber for the layers and water for the fluid did not establish a parallelism with actual conditions. He proceeded to elaborate the argument which Dr. Leonard Hill submitted in his opening, and said that Dr. Hill's work on the circulation in the brain had not yet been proved to be wrong, although it was published a number of years ago. Admittedly the eye was not quite rigid, but it was sufficiently so for physiological purposes. When a child's skull was trephined, and the rigidity of the skull thereby modified, it did not interfere with the cerebral circulation. In Dr. Hill's and his own view the tissue fluid was maintained, not by any filtration pressure in the *vis a tergo*, but to the pulsatile expansion and shrinkage of organs, and the expressive action of both intrinsic and extrinsic muscles, as well as by changes in posture, gravity, &c.—Dr. THOMSON HENDERSON (Nottingham) declared that his views on the physiology of the intraocular pressure were entirely dominated by the splendid work of Dr. Hill on the intracranial pressure. He (the speaker) maintained that the intraocular pressure was not a question of volume, but that it stood and varied with the intraocular venous pressure. Some of the views disregarded the fact that the vessels were embedded in a loose tissue stroma, which was in open communication with the angle of the anterior chamber. Therefore, the ciliary epithelium could not act as a mere passive filtering membrane, because the pressure on both sides of it was the same, and if fluid did escape from the vessels it would make its way direct into the angle of the anterior chamber. He exhibited sections of eyes of different animals and submitted that the anatomical conditions about the angle of the anterior chamber were such as to absolutely preclude any idea of filtration of aqueous. He had now a collection of 13,000 sections of eyes, mounted serially.—Mr. J. HERBERT PARSONS said he could not understand the antipathy to the filtration idea shown by Dr. Hill and his colleagues, who seemed to introduce a very difficult method of physico-chemical influence to account for processes which were explicable on simpler grounds. He could not see anything in the present discussion, so far, to cause him to modify the views he expressed in his work on the pathology of eye conditions, though perhaps he might have been a little more careful in the diction in which it was clothed, so as to obviate the criticisms which were sometimes directed unfairly against one's terminology. He proceeded to comment on weak points in Dr. Hill's experiments, and to argue that, the walls of the globe not being rigid, unless the animal were curarised in the experiments, enormous pressure was exerted by the extrinsic muscles. He was the first to show that the increased pressure produced on stimulating the peripheral end of the cervical sympathetic was due to retraction of the unstriped muscle of the orbit. He did not think that the consideration of the mode of production of accommodation was germane to the present discussion.—Dr. BATTEN demonstrated his views on intraocular pressure by a series of children's ordinary rubber balloons.—Mr. R. A. GREEVES pointed out that Coster found in his experiments that there was a definite increase of volume when the intraocular pressure was raised, and he had himself experimented upon it with fresh pig's eyes.—Professor STARLING and Dr. HILL then replied in detail on the whole debate, and were heartily thanked by the section.

[1] THE LANCET, Dec. 14th, 1912, p. 1651.

## SECTION OF BALNEOLOGY AND CLIMATOLOGY.

*Discussion on "Fibrositis."*

A MEETING of this section was held on Jan. 30th, Dr. PERCY LEWIS, the President, being in the chair.

Dr. R. L. J. LLEWELLYN (Bath), in opening a discussion on Fibrositis, intimated his intention of confining his remarks to muscular fibrositis. He emphasised the importance of gout as an etiological factor, 28·8 per cent. in his experience displaying objective stigmata, tophi, &c., but only 8 per cent. gave a previous history of acute articular rheumatism. The abrupt onset of acute cases was apparent, not real, the causal process having developed insidiously. The muscular effort impeached was not so much the cause of the malady as the occasion of its disappearance. As regards constitutional symptoms, he laid stress on the frequency of pyrexia even in milder cases, and also not uncommonly the incidence of endocardial symptoms. Pain was the chief subjective symptom in acute cases; aching and stiffness in chronic types. The objective changes in the former were swelling, increased local heat and, most important, increase in muscular tone or hypertonus, as shown by palpation. Hypertonus outlasted subjective symptoms, formed the link between exacerbations or relapses, and was responsible for (1) disorders of movement, whether volitional, passive, or synergic; and (2) disorders of circulation. The rhythmic movement and relaxation of exercise being replaced by a state of tonic spasm, the circulation through the affected muscle was impeded, and venous stasis resulted. This venous stagnation was, he thought, a strong contributory factor in the production of nodules or infiltrations; in other words, the result of congestive induration.

Professor R. STOCKMAN (Glasgow), in dealing with the pathology of fibrositis, said the pathological condition of the fibrous tissues varied from an œdematous and rapidly proliferating tissue, showing many fibroblasts and very few leucocytes, to a dense and compact nodule or patch, according to the site of the mischief. A very significant feature distinguishing pathological from normal fibrous tissue was the presence of marked peri- and endarteritis in the blood-vessels of the affected area, strongly supporting the idea that the condition was the product of reaction to an irritant conveyed in the blood. The sensitiveness of the subjects of chronic rheumatism to variations of temperature, humidity, &c., was probably due to excessive exudation of lymph from the diseased vessels under such conditions and its imperfect absorption. Some degree of interstitial neuritis was commonly found in the nerves of the affected areas, which explained the very painful nature of the disease.

Mr. KENNETH W. GOADBY directed the discussion to the bacteriological side, giving a *résumé* of animal experiments in which various bacteria isolated from the mouth, post nares, tonsil, fæces, and urine had been tested on animals. Certain of the organisms—streptobacillus malæ, streptococcus longus, bacillus necrodentalis—had been isolated from the urine and fæces of cases suffering from fibrosis. Autogenous vaccines of these organisms had produced first well-defined exacerbation, and finally, after a continued dosage, amelioration and improvement in the symptoms. Two cases were described in which no organisms were found in the urine until heavy massage of the affected parts, followed by the application of Bier's bandage, was given, when, the morning following, organisms were demonstrated in the urine.

Dr. JAMES MACKENZIE drew attention to certain forms of heart disease which occurred associated with muscular rheumatism. Among the various evidences of cardiac disturbances he was able to demonstrate that heart-block occurred. As the presence of this heart-block implied a limited lesion affecting the auriculo-ventricular bundle he suggested that in all probability the cardiac affection in these cases was due to an invasion of the heart muscle by the same process which Professor Stockman had shown to be present in the skeletal muscles.

## LIVERPOOL MEDICAL INSTITUTION.

*Exhibition of Specimens.—Fulminating Pneumonia.—Some Studies in Anaphylaxis.*

A PATHOLOGICAL meeting of this society was held on Jan. 30th, Dr. J. LLOYD ROBERTS being in the chair.

The following specimens were shown and described:—

Mr. ARTHUR J. EVANS: Adenoma of the Thyroid.

Mr. KEITH W. MONSARRAT: (1) Hydatid Cyst of the Kidney which had ruptured into the renal pelvis; (2) Alveolar Cyst; (3) Goitre with Cystic and Myxomatous Degeneration (there were in this case clinical symptoms of myxœdema); (4) Carcinoma of the Pylorus; (5) Carcinoma of the Colon (two cases); and (6) Chondrosarcoma of the Breast, which was described as probably peritheliomatous in nature.

Mr. W. THELWALL THOMAS: (1) Carcinoma of the Cæcum; (2) Œsophageal Pouch; (3) Epithelioma of the Scrotum; (4) Chondroma of the Nasal Septum; (5) Epithelioma of the Tongue; and (6) Epithelioma of the Forearm.

Dr. NATHAN RAW: (1) Secondary Sarcoma of the Dura Mater (the primary growth was in the choroid of the eye); and (2) two Uteri with Carcinoma of the Cervix, which had been removed after Cæsarean section.

Mr. THOMAS, Dr. NATHAN RAW, Dr. R. E. HARCOURT, and Dr. J. H. WILLETT took part in the discussion.

Professor ERNEST E. GLYNN read a note on Fulminating Pneumonia. He gave notes of 15 cases with 4 deaths from a public institution; 2 died in 7 hours; 2 died in 30 hours. All the cases occurred in children. In the most rapid cases there was no lung consolidation; pneumococci were demonstrated by inoculating mice and by microscopical sections. Photomicrographs illustrating the lesions in the lungs and kidneys were shown, the latter being due to the virulence of the toxæmia.—Professor J. M. BEATTIE, Dr. C. RUNDLE, and Dr. C. O. STALLYBRASS discussed the note, and Professor GLYNN replied.

Dr. J. MURRAY BLIGH read a paper on Some Studies in Anaphylaxis. It was based on experimental work carried out in conjunction with Dr. W. Blair Bell. He outlined the methods which had been employed by others to produce the phenomenon, and summarised the signs and symptoms which had been described as indicating the condition as seen in the guinea-pig, the dog, and in man. A comparison was drawn between anaphylaxis and serum sickness, and reference was made to heredity, to passive anaphylaxis, and to anaphylaxis *in vitro*. On the principle of the reaction of passive anaphylaxis, an attempt was made to devise a method of determining whether a given individual were sensitive already, which would be applicable to the diagnosis of cancer and other diseases. The inquiry was commenced by sensitising a group of animals according to orthodox methods, with the object of observing the development of the symptoms and sequelæ so graphically described by others. Anaphylaxis was not obtained. Several varieties of antigen, in varying doses, repeated at the end of varying incubation periods, were injected into rabbits and guinea-pigs. Eighty-six consecutive experiments were performed without the development of a symptom that could be attributed to anaphylaxis. The fact of anaphylaxis was not disputed, but the conclusion was drawn that it was a phenomenon more difficult to obtain than to avoid. Dr. Bligh concluded by submitting that sufficient attention had not been paid to the reasons why anaphylaxis sometimes did occur and sometimes did not; and it was decided to publish the results obtained because such negative evidence was of importance, and worthy of attention.—Dr. J. O. WAKELIN BARRATT referred to the difficulty of determining the nature of the anaphylactic process and to the consequent uncertainty of delimiting this process. Several illustrations were given. It was not possible at the present time to establish the identity of the process of local anaphylaxis with that of general anaphylaxis. He thought Dr. Bligh well advised in publishing the results obtained; and it was much to be desired that the conditions of the production of experimental anaphylaxis should in all cases be accurately recorded.—Dr. GELAIRE said that the phenomena which seemed to be sufficient to explain that anaphylaxis formed an albumin – anti-albumin reaction were, to his mind, not yet definitely determined. If it were true all anaphylactogens ought to be of an albuminous character, such as animal or vegetable albumin, or the albumin of bacteria, &c. But since they knew that anaphylaxis could be brought about by the combined action of antigen – antibodies – complement, they should bear in mind that antigen and antibodies were not all pure albuminous substances. That they were lipoids was shown in the syphilis reaction, in echinococcus disease, and in the alcoholic extracts of tubercle bacilli, &c. Anaphylaxis could be produced by glycogen, peptone, trypsin, saponin, sodium oleate, &c. As regards the quantity of serum injected, he said that bigger quantities had been used by those who were able to produce anaphylaxis than had been employed by Dr. Bligh and himself. He thought that those observers who had obtained positive results with very small quantities of serum had probably been using for the second injection serum from the same animal as that from which the serum for the first injection had been taken. The freshness of the serum was of importance, as the amount of fibrin ferment varied with the time the serum had been kept. The susceptibility of an animal to anaphylaxis depended both on the species of the animal and the kind of serum used. Pigs, for instance, could not be made anaphylactic with horse serum, and the results with rabbits were not constant. On the other hand, there seemed to be something in the serum which prevented anaphylaxis altogether. Extracts of organs produced anaphylaxis, but on adding fresh serum of the same species anaphylaxis could be prevented. He himself, when working some years ago in connexion with syphilis, had only seen anaphylaxis once in rabbits injected with the washed red blood cells of the sheep. In that case the animal died from anaphylactic shock four or five minutes after injection. Recently among the guinea-pigs used for anaphylactic experiments by him only two out of nine had died after the second injection of sheep's serum; two out of six had died after the second injection of horse serum. All had shown the symptoms of anaphylaxis, and the lungs on histological examination had shown the typical lesions associated with anaphylaxis. As regards serum disease, he thought that it was only a special instance of a group of phenomena such as had been observed after injection of bacteria in tuberculin, and after eating strawberries, shell-fish, and so on. The negative phase of Wright especially, perhaps hay fever and hyperemesis gravidarum, might also belong to this category; and all might be special manifestations of anaphylaxis. Since the serum of animals rendered anaphylactic contained much less complement than before the injection, he thought research as to the cause of anaphylaxis should be directed to the investigation of the serum of the injected animal.—Dr. T. R. BRADSHAW thanked Dr. Bligh for his interesting paper, which dealt with a subject which appeared to be of great practical importance at a time when serum-therapy was largely employed. At the same time, there were certain points in connexion with the subject which were difficult to comprehend. The statement that the sensitising and the exciting dose must take place through the same route seemed impossible to reconcile with accepted ideas of toxæmia and also with Richet's experiment, which showed the formation of apotoxin in blood *in vitro*. Dr. Murray Bligh's and Dr. Blair Bell's experiments with 86 animals were directly negative, and they proved at the very least that the danger of anaphylaxis, so far from being a pressing danger, as Richet supposed, was at most a very remote one.—Dr. G. F. R. SMITH also spoke, and Dr. BLIGH replied.

## SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

*Internal Derangement of the Knee-joint.—Osteomyelitis and Periostitis of Tibia.—Stone in the Kidney.*

A MEETING of this society was held on Feb. 6th, Dr. STANLEY RISELEY, the President, being in the chair.

Mr. ERNEST F. FINCH, in a paper on Internal Derangements of the Knee-joint, gave statistics of the results of treatment in 59 out of over 100 cases which had been treated in the Royal Infirmary, Sheffield, during the five years 1907–11. They were examined to ascertain (1) the history of the accident leading to the injury; (2) the relative frequency of injury to the two semilunar cartilages; (3) the length of time in hospital; (4) the time before work was resumed after the operation; and (5) the patient's opinion of the result and the wage-earning capacity compared with that before the accident. After a few preliminary

remarks on the anatomy of the joint, illustrated by lantern slides, Mr. Finch considered the mechanism of the joint. He showed that theoretically a sudden extension from a flexed or semi-flexed position would cause injury to the internal semilunar cartilage. This was confirmed by a definite history of a sudden extension in 44 of the 59 cases. In 7, however, the patient declared that the joint was fully flexed, and in 8 the position could not be ascertained. He briefly considered the symptoms and signs, pointing out that the diagnosis, when the patient came to hospital, was usually based on the history of the accident and the subsequent history of the patient as regards locking of the joint, &c. 25 of the cases were miners who had been injured in the pit; 20 of these had the joint injured by a sudden extension movement. The treatment recommended was operative, and by that he meant removal of as much of the cartilage as possible. In 3 cases where the cartilage had simply been stitched down it had to be removed subsequently. The after-treatment was to let the patient walk as soon as possible with no retentive apparatus on the limb whatever. The cases in which there was any ankylosis had all worn hinge splints subsequent to operation. Of the cases, 56 had injury to the internal cartilage and 3 to the external. Two cases had both cartilages removed from the same joint. The ages ranged from 11 to 56 years. The average duration in hospital was 22 days, the least 7 days, and the longest 37 days. The length of time elapsing after the operation before work was resumed was from 9 days to 5 years. Five had not resumed work, and of these one had marked fibrous ankylosis. In the other four no satisfactory cause could be found for the alleged incapacity. In 10 cases 9 months or more elapsed before work was resumed. In the remaining 44 cases the average time was 4 weeks. In the great majority of the cases creaking was felt in the joint on movement, but in no way interfered with their work. There had been no suppuration. The technique he left for discussion by the members of the society.

Mr. FINCH also showed a specimen of Osteomyelitis and Periostitis of the Right Tibia, removed by amputation from a youth of 16. The specimen showed an involucrum containing sequestra and cloacæ. The supposed cause was a "twist of the ankle" six weeks before admission to the infirmary.

Mr. GRAHAM S. SIMPSON, in a paper on Stone in the Kidney, based his remarks on an analysis of 30 operations for stone; of these, 16 were in the kidney; 4 were in the ureter; there was 1 case of hydronephrosis from stone, and 9 cases of calculous pyonephrosis. Under the heading of the examination, he stated albuminuria was present in 24 of the cases, that obvious hæmaturia was noticed in only 10, that skiagraphy was positive in 20 out of 21 cases, and that cystoscopy was useful in confirming the side of the lesion in 15 out of 19 cases. As regards treatment, he was an adherent of pyelotomy for removing stones, the great advantage being that there was no hæmaturia after the operation in these cases. No case of urinary fistula occurred in this series. Of the ureterotomies two were done by the extra-peritoneal route, one by the transvesical route and one by the intra-peritoneal route. The latter he regarded as an excellent operation. Nephrectomy was done nine times, once for a small contracted kidney full of stones and eight times for pyonephrosis. Only one case died. In this man a nephrotomy was done for multiple stones, and the patient died suddenly on the seventh day, apparently from a pulmonary embolism.

---

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 31st, Dr. A. Freeland Fergus, the President, being in the chair.—Dr. A. Ernest Maylard showed several cases of Cancer of the Colon treated by operation to illustrate abdominal incisions and methods of intestinal anastomosis. The incisions recommended were: (*a*) for exploration, the seat of obstruction in the colon being uncertain—a mid, sub-umbilical vertical incision; (*b*) for cæcum and lower ascending colon—an oblique incision in the right iliac region; (*c*) for hepatic flexure and upper ascending colon—a transverse incision carried outwards from a point situated above and to the right of the umbilicus; (*d*) for transverse colon—an incision carried across the abdomen 1 to 2 inches above the umbilicus; (*e*) for splenic flexure and upper descending colon—a transverse incision carried outwards from a point situated above and to the left of the umbilicus; incisions (*c*) and (*e*) gave access also to kidney tumours; (*f*) for lower descending, iliac, and pelvic colon—an oblique incision in the left iliac region. The methods of intestinal anastomosis illustrated were: (1) by lateral approximation; (2) by lateral implantation or side-to-side union; and (3) by invagination—i.e., pulling a short length of the proximal segment through a longitudinal opening in the wall of the distal. The method to be adopted in any case was determined by the amount of free gut available after removal of the involved segment. Where this was limited the first, where less limited the second, or preferably the third, method was recommended. This last lessened the tendency to leakage in the event of distension of the bowel, and diminished the grave risk of infection at the mesenteric attachment. To prevent distension after operation it was advised that the sphincter ani be paralysed and a rubber tube of large calibre inserted, encircled with iodoform gauze soaked in glycerine. Through this gas could escape freely and any discharges which might result from the irritative effects of the bowel wound.—Dr. Crawford Renton read a short paper on Obstruction of the Bowels. He referred to the various causes of obstruction and recommended the sigmoidoscope as an aid to the diagnosis of tumours in the rectum and sigmoid. In very acute obstruction Paul's or Moynihan's tube was advised to drain the bowel previous to a radical operation. The adoption of this procedure had greatly reduced the mortality. Where cæcostomy had to be done the method recommended by Kader for the stomach had been found useful. For paralysis of the bowel eserine salicylate and pituitary gland were strongly recommended. In the last 33 cases which Dr. Renton had operated on there were three deaths, which was encouraging, and if the operations were carried out early in every case the mortality ought to be less.—Dr. W. Watson read a paper on the Adulteration of Foodstuffs and its Influence on Digestion. The 1901 report of the Local Government Board upon the use of preservatives and colouring matters in the preservation and colouring of food showed that the substances most commonly used were boric acid, borax, salicylic acid, formalin, and sulphites, while a large number of other substances were in less common use. One or other of these was found in 39 per cent. of all samples of food examined, including samples of milk, cream, butter, margarine, sausage, bacon, brawn, potted meat, potted fish, meat extracts, meat juices, and temperance drinks. All these preservatives were germicides, all were gastro-intestinal irritants, and all had a more or less inhibitory action on the gastro-intestinal ferments.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 7th, Mr. Henry Curtis, the President, being in the chair.—Dr. W. Langdon Brown read a paper on Modern Methods of Diagnosis in Certain Digestive Diseases. Dealing first with the referred tenderness in abdominal disease he showed that the combination of superficial hyperæsthesia over the tenth thoracic segmental area, which includes the umbilicus, with deep-seated epigastric tenderness, was very suggestive of gastric ulceration. Hyperæsthesia in the region of the gall-bladder and appendix should be looked for in all cases of acid dyspepsia, as this might lead to detection of the origin of the trouble. The cutaneous areas of hyperæsthesia were not altered by displacement of the viscera. He then showed a series of skiagrams to illustrate the appearances of the normal stomach and the changes produced by malignant disease, gastroptosis, gastrectasis, perigastric adhesions, spasmodic contraction due to ulcer and the hour-glass stomach, pointing out the great help in diagnosis afforded in this way. The subject of the test-meal was then taken up and the methods of qualitative and quantitative analysis demonstrated. The value of determining the total acidity was shown by reference to the conditions in which the acidity was lowered (acute and chronic gastritis, achylia gastrica, and malignant disease) and those in which it was increased (simple hyperchlorhydria, peptic ulcer, cholelithiasis, appendicitis, and colitis). His opinion was that in such conditions as cholelithiasis and appendicitis the symptoms of acid dyspepsia were apt to be more definite than the test-meal findings. High acidity of the vomit was suggestive of simple pyloric obstruction. The method of examining the stools for occult blood by the benzidene test was demonstrated and its importance in the recognition of ulceration or malignant disease of the alimentary tract insisted on. Continuous small losses were suggestive of cancer, while intermittent larger losses pointed to a peptic ulcer.

# Reviews and Notices of Books.

*An Introduction to the Study of the Protozoa with Special Reference to the Parasitic Forms.* By E. A. MINCHIN, F.R.S. London: Edward Arnold. 1912. Pp. 520. Price 21*s.* net.

THIS compact volume contains all the main facts with reference to the structure and classification of the protozoa, although it is described by the author as simply an "introduction." There is probably no group of animals in which recent progress has so largely increased the bounds of knowledge as in the organisms of which Professor Minchin treats. Thus the problem before him was clearly not how to spin out his work, but how to concentrate and what to leave out. This has been partly accomplished by reducing the discussion of dubious questions and by adopting deliberately a "didactic attitude," which is perfectly legitimate in so well-informed a student of the group, especially when it is duly advertised in the preface, so that no misunderstanding can occur. The huge bibliography of the protozoa is also reduced to a little less than 30 pages, which will seem to the student not so well acquainted with the group a pretty fair list of publications; but Professor Minchin states that such a bibliography, if full, would easily occupy a volume by itself as large as that which now claims our attention. By these and other economical methods a comprehensive, but not unwieldy, treatise has been produced, which should furnish the serious student with all that he wants.

The book is divided into two parts of approximately equal size. The commencement is a general account of the protozoa as a whole, and treats of their anatomy, reproduction, and physiology. It is this part which will be most generally read. The second half of the volume, which is rather the larger, is systematic, and treats of these organisms in order of classification. Finally a very few pages serve for the discussion of certain doubtful forms—particularly the spirochætæ—whose position in the system is still hotly debated and not decided. To make of a treatise of this kind a reliable guide to the student it is plain that the newer work by frequently very young writers should receive a due share of attention. Here Professor Minchin has not been found wanting, some of his quotations extending even to the year of publication of his "Introduction." As a matter of fact, a quite great amount of the researches carried out among the protozoa is very new. This is owing, not to the greater efficiency of newer workers as compared with their forerunners, but rather to the discovery of histological methods which render clear structures previously invisible to the older authors. The remarkable fact is not how little was known before the last decade or so, but how much the writers of comparative antiquity were able to ascertain with their inferior technique. We find, therefore, some references in the bibliography to such writers; but it must be confessed that the vast majority of the entries are of the present century.

As would be expected from the title the most copious bibliography relating to any one group refers to trypanosoma and its very immediate allies; it is no less than four pages long. It is not unreasonable on the part of the author to devote very marked attention to these and other forms so directly interesting to men on account of their connexion with disease, and Professor Minchin's own work upon the protozoa is almost exclusively in this direction. A glance at the bibliography shows a comparative neglect of the non-parasitic forms of protozoa, such as the foraminifera and other groups, for which we are prepared by the author's declared limitations of his subject, but which is perhaps to be deprecated if only on the grounds that we must seek in free living forms for the origin of the parasites so fully treated of here. Indeed, the expression "protozoology" so commonly used at the present day hardly implies more than the study of trypanosomes and hæmosporidia. We must not be understood as in any way withholding admiration for, and appreciation of, the important discoveries of recent years upon the protozoan parasites of the blood, but as simply entering a plea for the less exclusively utilitarian views which are now so little in vogue.

---

*Experimental Physiology.* By E. A. SCHÄFER, F.R.S., Professor of Physiology in Edinburgh. With 83 illustrations. London: Longmans, Green, and Co. 1912. Pp. 112. Price 4*s.* 6*d.* net.

THE present volume is based upon "Directions for Class Work in Practical Physiology" published by the author just over a decade ago. The matter treated of in that volume is reinforced by additions chiefly dealing with experiments on the circulatory, respiratory, secretory, and nervous systems, having regard to such experiments as may be performed by the student either in class or individually in this country. The work is intended for elementary and advanced students, but the author does not discriminate between the experiments which are expected to be performed by one or the other grade.

The work consists of 30 chapters. In Chapter I., under ciliary motion, it might be well to indicate that the epithelium should be scraped from the roof of the mouth of a frog in which the brain has been destroyed. Instructions are given on the electrical apparatus commonly employed in physiology, and simple experiments are supplied to illustrate their use. The next chapters deal with the nerve-muscle preparation, nerveless muscle, recording of a simple twitch and the usual experiments on the work, extensibility and fatigue of muscle, the excitation of muscle and nerve by galvanic stimulus, conduction in nerve, electrotonus, electrical conditions of nerve and muscle, and a few experiments on involuntary muscle. These subjects occupy somewhat more than half of the text.

The frog's heart and the leading experiments on this organ, including perfusion experiments and experiments on the cardiac nerves of this animal, are next described. Then follow chapters on the structure and action of the mammalian heart, the blood-vessels, blood pressure and the pulse, and perfusion of vessels and lymph hearts, which bring the experiments on the circulation to a close. To the mechanism of secretion one chapter—two pages of small print—is given, to include the description of typical experiments on the submaxillary gland, pancreas, mamma, and kidney. Four pages are allotted to respiration, and short accounts of experiments on nerve roots, reflex action, and reaction time are followed by the easily performed experiments on cutaneous, gustatory, and olfactory sensations, and directions for experiments on the dioptric mechanism of the eye and stimulation of the retina. A couple of pages are devoted to the production of vocal sound, audition, and the semicircular canals.

It will be seen that the author covers the ground required by a medical student to enable him to profit by the instruction offered in his clinical work. The directions are definite, clear, and precise, the experiments well selected, while the illustrations are numerous and are drawn in a bold and striking manner which catches the eye and makes them a marked feature of the book. They refer chiefly to instruments and arrangements of apparatus, tracings obtained being practically excluded. The work is a concise and excellent presentation of the subject with which it deals.

There is a list of contents but no index. For one not familiar with the fixing of tracings it might be well to state the composition of the varnish used.

---

*Diseases of the Nervous System.* By JUDSON S. BURY, M.D. Lond., F.R.C.P. Lond., B.Sc. Vict., Senior Physician to the Manchester Royal Infirmary, and Professor of Clinical Medicine in the University of Manchester. Manchester: The University Press. 1912. Pp. 778. Price 15*s.* net.

Dr. Judson Bury's text-book on diseases of the nervous system is written in an essentially modern spirit, and in it are embodied the most recent investigations in the realm of neurology. With over 200 photographs and diagrams by way of illustration, pleasantly written and well printed, the work should find an assured place in English medical literature.

The author's classification of his subject is avowedly clinical, and on the whole we do not think it could be improved on. Clinical grouping of cases and of diseases is the most satisfactory from the teaching point of view, so long at least as their pathology in not a few instances remains obscure. Further, the student commences his exploration of neurology from the clinical side as a rule, and we agree with the author that the correlation of clinical types with the corresponding neuronic lesions is the best way of starting the student on a study from which he is apt, it may be, to be repelled unless he can, as it were, see light from the beginning. Thus the regional diagnosis of nervous diseases and the grouping of clinical symptom-complexes, considered together, will ere long enable him to attain those refinements in diagnosis which are the mark of the expert. We must, further, express our gratification at the bold way in which Dr. Bury has declared his intention of avoiding the terms "organic" and "functional." Nothing could possibly be more misleading, we contend, than the indiscriminate use of the term "functional," especially when regarded as identical with "hysterical." There must be no difference in the student's investigation of these two groups of diseases, even if we assume that they can be differentiated. As a matter of fact, the attempt would be both unwise and reactionary; all nervous disease must reveal itself by impairment of function, and all symptoms in this sense are "functional." Dr. Bury sagely observes that the adoption of this mental attitude by the student will lessen the likelihood of his overlooking the beginnings of serious changes in the nervous system, which may have led to the manifestation of some of the phenomena loosely described as "functional."

In Dr. Bury's classification we question whether it is expedient to separate clinically "intrinsic diseases of the spinal cord" (Chapter VI.), including myelitis, intramedullary tumours, syringomyelia, spinal hæmorrhage, and compressed-air sickness, from "spinal disorders characterised by the presence of pain" (Chapter VII.), including diseases of the spinal membranes and diseases giving rise to compression of the spinal cord. The assumption would be that the diseases of the former group are not painful, but this can scarcely be maintained in view of the fact that in caisson disease the almost pathognomonic symptom is the well-known "bends" or pains, while intramedullary tumours may certainly, though occasionally, give rise to severe root pains, and, on the other hand, compression of the cord from whatever cause need not be, and is not always, accompanied by pain. In mentioning the common pathological changes in the cerebro-spinal fluid a note might be added on the occurrence of spontaneous coagulation and of a xanthochroic change in various cases of complete spinal compression where circulation of the fluid is interfered with. Dr. Bury states that the order of involvement of cranial nerves in extra-cerebellar tumours is eighth, seventh, sixth, respectively. It is not uncommon, however, to find that after the eighth the sensory fifth is next involved. In the section on infantile cerebral hemiplegia we note that the superficial reflexes are described as generally diminished on the hemiplegic side; it is a curious fact, in this connexion, that in a considerable proportion of cases, for an unknown reason, the abdominal reflex is lively on the affected side.

Dr. Bury's text-book can be put with every confidence into the hands of the student of neurology. For the work bears every evidence of original thought as well as of a widely cultured interest in modern neurological literature; it is thoroughly practical, readable, and accurate, and we congratulate the school of Manchester, wherein the work necessary for its production has been done.

---

*Pathologische Anatomie des Ohres.* Von RUDOLF PANSE, Dresden. Mit 208 zeichnungen des Verfassers nach eigenen prepäraten und 4 schemas. Leipzig: F. C. W. Vogel. 1912. Pp. 239. Price, paper, 12 marks; bound, 13.50 marks.

THE publication of a large book devoted entirely to the pathological anatomy of the ear might at first sight appear an ultra-refinement of specialism. A little consideration, however, will show this not to be the case, for nowhere else in the body is there an organ enclosed in dense bone; nowhere else is such special technique required in the investigation not only of abnormal, but even of normal, conditions. Again, difficult of investigation as are the intra-labyrinthine abnormalities and diseases, they have but a modicum of interest to those engaged in the study or practice of medicine, excluding aurists. The result is, that were it not for special treatment, aural pathology would not attract the attention it requires and deserves. The technique is handled clearly and at the same time very briefly, but enough is said in regard to fixing, decalcification, staining, and so forth, after which each part of the aural appendage is investigated from the external ear to the brain. It is, however, chiefly, if not entirely, in the pathological states of the labyrinth that the interest of the book lies, and that without detracting from the merits of the remainder.

For the student of aural disease Professor Panse's book will be quite valuable. As a trustworthy guide and book of reference it is to be heartily recommended, though it is a pity that, like that of so many of his compatriots, his reading appears to be confined exclusively to the writings of his fellow countrymen.

---

*Diseases of the Skin.* By WILLMOTT EVANS, M.D. Lond., F.R.C.S. Eng., Surgeon to the Royal Free Hospital and to the Skin Department of the Royal Free Hospital, and Senior Surgeon to the Hospital for Diseases of the Skin, Blackfriars. With 32 illustrations. London: Henry Frowde and Hodder and Stoughton. 1912. Pp. 375. Price 10*s.* 6*d.* net.

IN his preface to this manual Mr. Evans states that it is intended to provide an introduction to the study of diseases of the skin, the standard treatises on the subject being too advanced for those who are beginners. Within the past decade there has been a great increase of attention devoted to dermatology both by students and by general practitioners. Coincidently, therefore, there has arisen a demand for works dealing with dermatology in a less exhaustive manner than is required by the specialist in that subject. To meet this growing need quite a number of short volumes on skin diseases have been published within recent years, and amongst them may worthily rank the text-book under review.

Mr. Evans has arranged the subject matter very usefully, and the brief, yet clear and systematic, account of each

disease is admirably adapted to suit the needs of the student. Recondite theories and lengthy pathological details are avoided. Moreover, the reader of dermatological works is usually bewildered by the large number of remedies recommended in the treatment of skin diseases. Mr. Evans wisely limits his paragraphs on treatment to one or two prescriptions which he has personally tested and approved.

We regret to see that seborrhœa is discussed under the old divisions—seborrhœa sicca and oleosa—introduced by Hebra. The recent work of Sabouraud has thrown a flood of light on the causation of seborrhœa and the allied conditions so long confused with it. Syphilis is, perhaps, as completely described as is necessary considering the scope of the book, but in a future edition it would, we think, be an advantage to enlarge the paragraphs on diagnosis and treatment. This protean disease imitates so many other skin diseases that not only the student but also the dermatologist is frequently puzzled in his endeavour to distinguish it from the clinical appearances of pityriasis rosea, psoriasis, and lupus vulgaris. Mr. Evans does not enumerate all the points which might be passed in review before a diagnosis can be hazarded in obscure cases where the Wassermann test cannot be applied; indeed, throughout the book the paragraphs on diagnosis of the common diseases could with advantage be extended. We find no mention of sporotrichosis or of pseudo-pelade, although some even rarer diseases are fully dealt with.

The illustrations and the coloured plate are quite up to the standard expected in a modern work on dermatology, and we consider that this manual will prove very useful for the purpose for which it is intended—it will greatly lighten the work of the student by its clearness and simplicity.

---

*Health and Medical Inspection of School Children.* By WALTER S. CORNELL, M.D. London: Stanley Phillips, 23, Creighton-road, Queen's Park, N.W.; Philadelphia: F. A. Davis Co. 1912. Pp. 614. Price 12*s.* 6*d.*

Dr. Walter S. Cornell's book consists of two main divisions, the first comprising medical inspection and hygiene, and the second a consideration of the defects and diseases of school children in detail. In the first, or administrative, section we note some interesting differences between American and English practice. The United States system is not so definitely organised as is our plan of inspection over here, and a study of the method of work and forms used in this country, and of the relation of our Board of Education to the local authorities, would well repay American administrators. On the side of administration the American methods are somewhat primitive, but the lack of centralisation allows of an interesting variety of experiment, and there are many useful hints to be got on this side of the work. A daily visit to the schools to see "special" cases seems usual; routine weighing and measuring are discarded; and unvaccinated children are excluded until they have been vaccinated, owing apparently to a much greater frequency of local epidemics.

The method of examination of children is much the same as in Great Britain; but as the inspector has no authority to examine the chest, and as the parents are not usually summoned to be present at the time of examination (nor, by the way, are teachers), there is no effective record of chest troubles, of spinal curvature, or of those heart defects found to be so common at inspections in this country. Undressing and examination for "general cleanliness" is classified as "work which is scientific but impracticable of accomplishment." Twenty children is the number suggested for examination on one day by each inspector. Dealing with treatment of defects, we find the same pressure in America as in England toward the provision of treatment by public authorities, and in some cities such treatment is now provided. Dr. Cornell lays it down that each city should retain in its service, for treatment and diagnosis, a neurologist, a dermatologist, an ophthalmologist, and an orthopædist.

The administrative suggestions are interesting, and the larger part of the work relating to the special defects dealt with by the school doctor will prove valuable and helpful to all engaged in actual inspection of school children. Much space is devoted to the consideration of eyestrain and of mental deficiency. The book is well illustrated, and can be cordially recommended to all school hygienists as a useful survey of the clinical conditions to be expected.

---

*The National Insurance Act, 1911. Being a Treatise on the Scheme of National Health Insurance and Insurance against Unemployment Created by that Act, with the Incorporated Enactments, Full Explanatory Notes, Tables, and Examples.* By ORME CLARKE, of the Inner Temple and Western Circuit, Barrister-at-Law. With an Introduction by Sir JOHN SIMON, K.C.V.O., M.P., Solicitor-General. Second edition. London, Winnipeg, Sydney, and Calcutta: Butterworth and Co. 1913. Pp. 636. Price 12*s.* 6*d.*

WHEN reviewing the first edition of Mr. Orme Clarke's excellent text-book it was pointed out that the issue of Regulations would probably render a second edition necessary before amendment of the Act took place, or, what would have amounted to the same thing, before its provisions were tested in the working. The inclusion of nearly 150 fresh pages in Mr. Clarke's second edition is due principally to the publication of the Regulations, and these naturally comprise matter with which all those directly or indirectly concerned in working the Act have to render themselves familiar, or at any rate require within their reach for reference. The author has not apparently found much to correct in or add to his notes on the text of the Act; but under Section 16 a note on the interpretation of the word "treatment" has been added, and perhaps before Mr. Clarke's third edition issues from the press there will be judicial authority upon this subject. In discussing Subsection 2 (B) of the same section a very interesting point is raised as to the limitation of the "research" to which the Insurance Commissioners are authorised to devote moneys provided by Parliament. Is it to be research in connexion with tuberculosis only? Mr. Clarke is inclined to take the wider construction as right, and he submits that the Commissioners may devote money to research in relation to any disease which affects insured persons, and consequently the insurance funds. It need hardly be said that the adoption of such a view and the vigorous prosecution of research with the object of preventing disease should be more genuinely economical and should do more to render the National Insurance Act of national benefit than any completeness of organisation or administration for curative purposes only.

---

*Maladies du Pancréas, de la Rate, et du Mésentère.* Par G. CHAVANNAZ et J. GUYOT, Professeurs à la Faculté de Médecine, Chirurgiens des Hôpitaux de Bordeaux. Paris: J. B. Baillière et Fils. With 126 figures. 1913. Pp. 403. Price, paper, 10 francs; bound, 11.50 francs.

THIS is an important section of the Nouveau Traité de Chirurgie of Dentu and Delbet, and it deals with three subjects which often do not receive their full share of notice in treatises on surgery. The pancreas has come into the area of surgery only within very recent years; and even at the present time it cannot be said that the surgical treatment of its diseases has reached a perfectly satisfactory level. The account given here is excellent, and it not only describes well the present state of our knowledge, but also offers indications of the direction which the surgery of this organ may take.

The clinical examination of the pancreas is fully discussed, and all the tests that have been recommended for the recognition of disease of the pancreas are described. With regard to the Cammidge reaction, the authors limit themselves to saying that though the test deserves to be applied, too much importance must not be placed on the result. The most important chapter is naturally that dealing with the surgery of cysts of the pancreas, for that is the morbid condition for which surgery has the most to offer.

The section dealing with the surgery of the spleen is perhaps even more interesting than that treating of the pancreas. The operation of splenectomy is now performed for a variety of conditions. The authors advise it strongly in Banti's disease; and the statistics in cases not very far advanced and not complicated give a mortality of 18 per cent., which is not very high when the severity of the disease is considered. It is clear that if the best results are to be obtained in this affection the operation must not be postponed to a late stage. In the surgery of the mesentery the part first treated is the effect of the obliteration of the mesenteric vessels, and the tumours of the mesentery are described. The former is a somewhat rare condition about which a good deal has been written in special articles, but which has received but scanty treatment in ordinary surgical works.

Each section of the book has been provided abundantly with bibliographical references. We have found this work on some of the bypaths of surgery very interesting, while its suggestiveness will also make it valuable.

---

*Systematic Case-Taking: a Practical Guide to the Examination and Recording of Medical Cases.* For the Use of Medical Students. By HENRY LAWRENCE MCKISACK, M.D.R.U.I., M.R.C.P. Lond., Physician to the Royal Victoria Hospital, Belfast. London: Baillière, Tindall, and Cox. 1912. Pp. 166. Price 3*s.* 6*d.* net.

CASE-TAKING in the wards is one of the most important and valuable parts of the student's course of clinical instruction, if adequately carried out under systematic methods. Dr. McKisack, in his preface, after pointing out the necessity for personal instruction in the wards in this subject, expresses the view that a methodical syllabus can serve to add completeness and coördination to the student's method of examination. This object his small guide is well calculated to secure, since it is more than a mere catalogue or summary of the procedure concerned in case-taking. Each sign and symptom is briefly but clearly described, together with a short statement of its significance, and in many cases an explanation of its production. The first chapter is devoted to preliminary inquiries, and gives suggestions as to the eliciting of the history, including family history and the history of the patient's symptoms. The general examination is next discussed, and then the various systems and organs are separately considered. In every case the information given is clearly expressed, is well systematised, and is divested of unnecessary technicalities.

Dr. McKisack's book should be a useful companion to the student who is "clerking" in the medical wards, since it affords him a system on which to proceed, and at the same time gives explanations of the conditions observed.

---

*Gynäkologisches Vademekum für Studierende und Aerzte.* Von Dr. A. DÜHRSSEN, Berlin. With 138 illustrations in the text and 11 plates. Berlin: S. Karger. 1913. Pp. 306. Price 6.80 marks.

THERE is little need for our commendation of a book which has reached its tenth edition and has been translated into English, French, Italian, Russian, Polish, Turkish, and Greek. The book was originally translated into English by the late Mr. J. W. Taylor and Mr. Frederick Edge, and in this form has no doubt been read by many English students. As Mr. Taylor and Mr. Edge pointed out in the preface to their translation, the work is a clear and safe guide to the knowledge of all the purely gynæcological diseases, and deals very fully with details of the examination of patients, the preparations for operations, and the operations in more general use.

The predilection of the author for the vaginal route in operating is well known, and to him more than to any other gynæcologist are our thanks due for the pioneer work done in this direction. It is not surprising, therefore, that a considerable amount of space is devoted to the various operations which can be performed by this route, and for the surgeon who wishes to obtain a first-hand knowledge of these procedures this little work will prove highly serviceable. Professor Dührssen still holds that a vaginal extirpation of the uterus in cases of carcinoma of the cervix, provided that Schuchardt's incision is employed, gives as good results with a lower death-rate as the extended abdominal operation, and his views on this and on other debatable points in gynæcological practice are naturally of the highest value. A most interesting chapter to the surgeon is the short one dealing with his legal responsibility to his patient. The author describes and recommends Lennander's method of opening the abdominal wall, in which the incision is made to one side of the middle line, the rectus muscle displaced, and then the peritoneum opened medianly; on the closure of the wound the rectus muscle is attached by sutures to its aponeurosis in the mid-line.

There are many other points of interest in this little work which will repay perusal as an expression of the views of one of the most distinguished and original of German gynæcologists.

---

*Die Gallensteinkrankheit und ihre Behandlung vom Standpunkt des inneren Mediziners und Chirurgen.* Von Dr. KARL GRUBE, Professor in Bonn, Arzt für innere Krankheiten in Bad Neuenahr; und Dr. HENRY GRAFF, Professor und Dirigierender Arzt der chirurgischen Abteilung des Marienkrankenhauses auf dem Venusberg in Bonn. Mit 3 Lithogr. tafeln und 20 Textfiguren. Jena: Gustav Fischer. 1912. Pp. 172. Price 7 marks.

THIS is a very practical treatise on gall-stones, the symptoms to which they give rise, and the treatment which should be employed. After an account of the anatomy of the gall-bladder and the ducts, the various forms of gall-stones are described and the pathological anatomy is discussed. The important subjects of etiology and symptomatology are taken next. The diagnosis and treatment are fully considered. In the latter first comes the preventive treatment of gall-stones; then follows that of acute attacks; the special drugs which are supposed to dissolve gall-stones are mentioned; and of all of them, even of Chologen, from which much has been expected, the authors are able to report nothing of real value. With regard to operative treatment, they consider as suitable for operation: all chronic cases, if the presence of pain interferes with work; all acute cases with acute inflammatory processes and threatening peritonitis or perforation; all chronic inflammatory processes with septic manifestations; all cases with chronic blocking of the common duct; and all cases in which there is a suspicion of malignant disease. The operation should remove every trace of gall-stones, it should clear the biliary passages, and should, so far as possible, prevent the formation of fresh stones. The technique of the operation is well described; most of the incisions which have been recommended for exposing the gall-bladder and bile-ducts are given. The one which the authors prefer is this: They make a longitudinal incision in the outer third of the right rectus, the fibres of which are separated by a blunt instrument, and three fingers' breadth above the umbilicus the

incision curves outwards, when it can be carried as far as the conditions render necessary. The carrying out of the several surgical procedures needed by the conditions found is described. Three coloured plates of gall-stones and of a dilated gall-bladder are given.

---

*Geometrical Optics.* By ARCHIBALD STANLEY PERCIVAL, M.A., M.B, B.C. Cantab., Senior Surgeon, Northumberland and Durham Eye Infirmary. London: Longmans, Green, and Co. 1913. Pp. 132. Price 4*s.* 6*d.* net.

Dr. Percival is indefatigable in his endeavours to interest and instruct the medical student in the mysteries of ophthalmic optics. As all know, he is a safe guide. The present book is an expansion and simplification of the more elementary chapters of his larger work on optics. He adopts the analytical method, and the array of algebraic symbols and formulæ will be liable to depress the average student, but we hope they will not cause him to abandon the book in discouragement. Optics requires thought and not mere absorption of knowledge, and thought requires the expenditure of energy which in this case is repaid with compound interest. A formula mastered is a mine of knowledge attained, and those who have passed through the mathematical mill will have gained a conception of the optical problems of ophthalmology which will serve them in good stead in the practical details of ophthalmoscopic work and the correction of refractive errors. The intelligent student will have no difficulty in following Dr. Percival in his exposition of reflection and refraction of light by plane and spherical surfaces. The theory of cardinal points is illustrated by the thick lens and the optical system of the eye. The paragraphs on graphic methods require more explanation and are particularly worthy of further elucidation. In the appendix the elements of reflection and refraction of oblique pencils are discussed, as well as the circle of least diffusion and deviation by prisms. The work is well printed and can be cordially recommended.

---

## LIBRARY TABLE.

*Annals of Tropical Medicine and Parasitology.* Series T.M., Vol. VI., No. 4.—This number of the Annals contains nine articles upon varied topics, some of them being of particular interest. The first two are contributed by Dr. B. Blacklock, and give an account of some experiments on the resistance of the bed-bug to various reagents, powders, liquids, and gases; and another series on the resistance of the tick, ornithodorus moubata, to various sheep-dips. Dr. Blacklock finds no evidence that bed-bugs can be cleared out of a house by insecticide powders, the same remark applying to liquid remedies; gaseous substances, however, offer the best prospect of success, sulphur dioxide being cheap as well as effective. As regards ticks, it appears that when feeding they are not easily caused to loosen their hold by application of sheep-dips. These dips seem to have very slight effects upon the tick when used in the strength and for the length of time usually recommended.—Mr. Henry F. Carter, F.E.S., furnishes descriptions of three new African species of the genus Tabanus, with illustrations.—Dr. G. C. Simpson and Mr. E. S. Edie jointly discuss the influence of quinine on hæmoglobin metabolism in malarial fever. Increased excretion of urobilin may occur after the administration of quinine in doses of 10 to 30 grains daily. A similar result follows injection of blood pigment or hæmolytic drugs. Quinine, these investigators state, possesses the power of determining hæmolysis in the body, though the exact mechanism of its action must be further investigated. Individual or pathological idiosyncrasy may exaggerate this action, and so account for the influence of quinine in blackwater fever.—An interesting article, illustrated with two plates, on the cultivation of one generation of malarial parasites (plasmodium falciparum) *in vitro*, by Bass's method, is contributed jointly by Dr. J. G. Thomson and Dr. S. W. McLellan, accompanied by a note by Sir Ronald Ross. There is indisputable evidence by these investigators of the successful cultivation of plasmodium falciparum up to the sporulating forms.—Miss Helen A. Adie, of the Malaria Laboratory, Lahore, adverting to a previous communication in THE LANCET of March 30th, 1912, supplies a note (illustrated) on the sex of mosquito larvæ.—A joint preliminary communication upon some effects of the occurrence of myxosporidia in the gall-bladder of fishes is furnished by Dr. H. B. Fantham and Miss Annie Porter, D.Sc., who hope shortly to deal with some of the myxosporidia parasites in greater detail and to discuss more fully the various changes occurring in infected fishes.—Dr. Allan Kinghorn and Dr. Warrington Yorke continue their series of reports upon the work of the Luangwa Sleeping Sickness Commission. Upon the present occasion they give further observations on the trypanosomes of game and domestic stock in North-Eastern Rhodesia; they also supply, in collaboration with Mr. Llewellyn Lloyd, entomologist to the commission, an account of their investigations on the development of trypanosoma rhodesiense in glossina morsitans. The parasites multiply in a certain proportion of the tsetse flies, in the intestine. To become infective the salivary glands of the fly must be invaded. Dr. Kinghorn and Dr. Yorke think that probably the salivary glands of the flies become invaded by parasites which have reached a certain stage in their development cycle in the intestine. Invasion of the salivary glands was only observed in the case of flies infected with the human trypanosome (T. rhodesiense) and not in the case of any of the other trypanosomes with which they had to deal either in the Luangwa valley or on the Congo-Zambesi watershed. A description of the parasite as it appears in different portions of the tsetse fly is reserved for a further communication.

*The Students' Human Physiology: a First Year's Course in the Practice and Theory of the Subject.* By ERNEST EVANS, Natural Science Master, Technical Institute, Burnley. With 113 illustrations. London: George Allen and Co., Limited. 1912. Pp. 304. Price 5*s.* net.—This book, it seems, has been prepared with the object of showing how a complete course of instruction in the practice and theory of the more elementary parts of human physiology can be given, and it is said to contain all the essentials for a first year's course in the subject. It is meant for use in schools. Much of the teaching is vague and some quite incorrect as it stands, however good the author's meaning may be. "The modern science of physiology," he says, "was established in the sixteenth century by Harvey when he discovered the circulation of the blood." Harvey's famous work was published in 1628. The mistake is made throughout of confusing "fixing" of tissues with "hardening." "The heart is placed in the middle line of the thorax"; "on the upper surface (of the stomach) or lesser curvature the liver rests, and on the lower or greater curvature comes the pancreas"; "the blood during its passage through the body is propelled from the ventricles to the auricles by the contraction of the heart"; "a capillary is a small tubular opening in connective tissue"; "the position occupied by the coronary arteries shuts off much of the high pressure which exists in the aorta." We have taken these instances at random. As to the illustrations, some of them are, to say the least, not illustrative, such as a transverse section of the neck, the fibro-cartilage of a cow's ear, and fibrin network. The diagram of the circulation of the blood (p. 104) shows the portal vein springing from what is called "systemic

circulation," and the "renal vein" arising from the aorta, while in the same diagram a conical-looking body marked 4 is left without a name. In another illustration the vermiform appendix is shown nearly as large as the ileum. It is scarcely conceivable that a figure such as Fig. 98 should be given showing "the brain as seen from the right side." The shortcomings of this book are only too obvious, whatever merits the work may possess from the industry of the author.

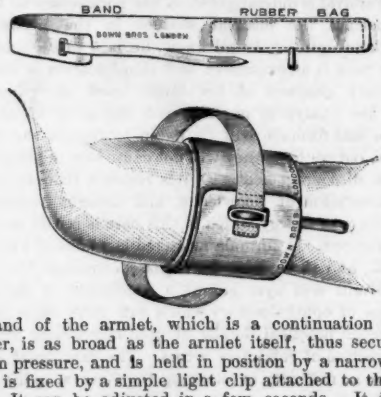
*Chirurgische Instrumente des Altertums.* Ein Beitrag zur antiken Akiurgie von Dr. med. et jur. THEOD. MEYER-STEINEG, a.o. Professor an der Universität Jena. Mit 8 Tafeln. Jena: Gustav Fischer. 1912. Pp. 52. Price 5 marks.—This is the first volume of a new series intended to deal in an interesting manner with various aspects of the history of medicine. The present volume is concerned with ancient surgical instruments, and it treats of the material of which they were composed and the uses to which they were put. It is of great interest to see that many instruments which we usually regard as of quite modern invention have been anticipated in Greek and Roman times, or even in earlier forms of civilisation. In such a small compass nothing like a full account can be given of a large subject, but the reader will find much that is of interest in Dr. Meyer-Steineg's pages, and their perusal will probably incite him to further study.

*Catalogue of the Etched Work of Frank Brangwyn, A.R.A., R.P.E.* London: The Fine Art Society. 1912. Pp. 139. Price 3 guineas net.—The original etchers of the present day, among whom Mr. Frank Brangwyn occupies so prominent a place, find some of their most appreciative admirers in the ranks of the medical profession, from which have been supplied several excellent etchers and at least one of high distinction, the late Sir Francis Seymour Haden, as well as many discerning collectors. Mr. Brangwyn has obtained recently both as a decorative painter and as an etcher that full recognition in England that has long been accorded to him on the Continent, and an output to the present date of 200 plates, some of course of minor importance, and many hardly now to be found, marks a period in an artist's career when permanent and authentic record of what has been done by him becomes desirable. The volume now issued by the Fine Art Society constitutes such a record. It contains nothing superfluous, but all that is needed, reproducing for the purpose of identification all but a dozen etchings which were presumably not obtainable, but of which sufficient description is given. The illustrations are supplemented by titles and dimensions as well as by brief but informative particulars of localities dealt with, and there is a full index.

# New Inventions.

## IMPROVED ARMLET FOR SPHYGMOMANOMETERS.

THE armlets hitherto supplied for use with manometers have been open to the following objections. The wall of the rubber bag nearest to the arm of the patient is usually made of thin rubber, and the outer wall, to ensure rigidity, of thicker rubber, with the result that should the armlet be adjusted in an uneven manner, so that the compressed air inside presses unequally upon one part of it, the thin rubber has a tendency to "balloon" and burst. Another obvious disadvantage has been that the armlet cover is generally made of some non-sterilisable material, such as leather and baize, and is fastened in position by either buckles or clips attached to more or less narrow bands. The cover is therefore likely to become soiled, and the rigid bands, by constricting the arm unevenly, increase the strain upon the thin part of the rubber bag. The buckles and clips are also a source of trouble, the sharp prongs of the buckles occasionally penetrating the rubber bag and sometimes the fingers of the surgeon. The clips also need some slight skill in order to adjust them properly, and their presence when the manometer is packed in its case for transport occasionally causes a breakage of the manometer tube at an inconvenient moment. In the new armlet shown in the above illustration, these difficulties have been overcome. The rubber bag is of a uniform substance throughout, strengthened in a special way at the edges only. The outlet tube is in a convenient position at the lower edge of the armlet, thereby reducing the liability to kink at this spot.



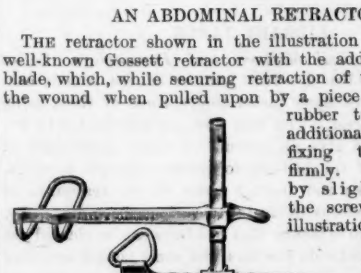

The band of the armlet, which is a continuation of the wrapper, is as broad as the armlet itself, thus securing a uniform pressure, and is held in position by a narrow strap which is fixed by a simple light clip attached to the band itself. It can be adjusted in a few seconds. It is thus claimed for this armlet that there is no liability of its bursting, the pressure is uniform, and it is simpler to adjust than former models. The cover is of washable material, and can be easily slipped off when necessary.

Messrs. Down Bros., Limited, St. Thomas's-street, London, S.E., are the makers of the armlet, which they are supplying with Dr. Herbert French's sphygmomanometers. They can also be supplied for use with other similar instruments.

Streatham Hill, S.W. WALTER VERDON, F.R.C.S. Eng.

## AN ABDOMINAL RETRACTOR.

THE retractor shown in the illustration consists of the well-known Gossett retractor with the addition of a third blade, which, while securing retraction of the lower part of the wound when pulled upon by a piece of stout silk or rubber tubing, has the additional advantage of fixing the instrument firmly. This blade can, by slightly relaxing the screw shown in the illustration, be moved backwards or forwards, or completely removed, while by tightening the screw it is firmly fixed in any desired position by bringing into apposition two corrugated surfaces. Lateral movement is not restrained, but the blade naturally tends to assume a position midway between the other two blades. I have had this instrument in frequent use for the last 18 months, and it has entirely fulfilled my expectations.



It has been made according to my suggestions by Messrs. Allen and Hanburys, Limited, Wigmore-street, London, W.

LAURENCE C. PANTING, M.D. Oxon., M.R.C.P. Lond., F.R.C.S. Eng.

Truro.

ROYAL SUSSEX COUNTY HOSPITAL.—Through the generosity of several friends the Royal Sussex County Hospital at Brighton is to be equipped with a steam steriliser for the disinfection of bedding. The apparatus will be fitted with a special attachment whereby mattresses, blankets, and clothes may be permeated with a solution of formalin under heavy pressure.

THE LANCET.

*LONDON: SATURDAY, FEBRUARY 15, 1913.*

## The Administrative Control of Tuberculosis.

IN a review of the annual report for 1911–12 of the Medical Officer of the Local Government Board[1] attention was drawn particularly to Dr. NEWSHOLME'S remarks upon the administrative control of tuberculosis, and as this is certainly among the most important medical questions of the day we make no further excuse for referring again to the subject, mainly from the points of view put before us in a most interesting Blue-book. In the year 1898 the practicability of dealing with the control of tuberculosis by administrative methods was for the first time mentioned by the late Sir RICHARD THORNE THORNE, at that time medical officer of the Local Government Board. His Harben lecture on "The Administrative Control of Tuberculosis," delivered before the Royal Institute of Public Health, is believed to have been instrumental in determining the formation of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, which was inaugurated at Marlborough House in 1898, under the patronage of His late Majesty King EDWARD, at that time Prince of Wales. A lively impetus was at once given to the preventive treatment of tuberculosis, and successive recent reports of the Registrar-General have contained evidence of the great saving of life represented by the diminished fatality from this cause in recent years. Dr. NEWSHOLME presents in his report two diagrams dealing with tuberculous (and other) mortality in both sexes from the year 1851 to the present time. If allowance be made for the fact that formerly the term "consumption" was used more often than now to designate non-tuberculous wasting disease accompanied by expectoration, it is probable that the curves of mortality from pulmonary tuberculosis indicated in these diagrams are approximately correct. They show for both males and females a fairly steady decline in mortality from this cause in the course of the last 40 years. With respect to the average duration of sickness from this affection, it is believed that for every annual death from pulmonary tuberculosis there are probably three persons constantly suffering from that disease.

One of the most important things to be settled in the causation of the disease was seen 15 years ago to be the relation of human and animal tuberculosis, for on this there would obviously depend the course of much of the preventive machinery to be employed. It will be remembered that in the year 1901 Professor KOCH made the statement that bovine infection was negligible in practice as a cause of tuberculosis in man. In August of the same year a Royal Commission was appointed to test the accuracy of the statement and to report whether the disease in animals and in man were one and the same; whether animals and man could be reciprocally infected with it; and under what conditions, if at all, the transmission of the disease from animals took place, and what were the circumstances favourable or unfavourable to such transmission. For Professor KOCH'S statement had profoundly startled the scientific world, and as a consequence of the reputation of its distinguished author a thorough investigation was felt to be due. It was promptly set on foot. The relation between human and animal tuberculosis and the relative frequency of human and animal infections respectively were inquired into by a strong Commission. From the public health point of view investigations of this kind are of momentous importance, for upon the answer to such questions must depend much of our routine of public health—e.g., whether the condemnation of tuberculous meat is to be justified; and still more, whether the enforcement of precautions against the tuberculous contamination of milk, butter, and cream is to be held necessary in future. The result of all investigations hitherto undertaken has been to establish the conclusion that infection of animal origin is a considerable cause of tuberculosis in the human subject, especially in children. The proof of this fact has been one of the main results of the labours of the Royal Commission. Among other facts emphasised in their report are the following: (*a*) that the excretion of tubercle bacilli has been observed in the milk of tuberculous cows not suffering from tubercle of the udder, as well as in the fæces of cows suffering from only a slight degree of tuberculosis; and (*b*) that after subcutaneous inoculation tubercle bacilli travel with great rapidity to distant parts of the body. The presence of bacilli of bovine origin in certain types of tuberculosis has been clearly demonstrated, as also has the rarity of bovine bacilli in pulmonary tuberculosis. Except in rare instances pulmonary tuberculosis in adults is caused by infection of human origin, but in other types of tuberculosis, especially among children, bovine infection is not infrequently the cause of human tuberculosis. This conclusion has received the support of all the evidence at present available. As a factor in effective infection by tuberculosis—i.e., in the production of non-retrogressive disease—the importance of dosage is illustrated by the experiments of the Royal Commission. The larger the dose of bacilli injected into an animal of given age and weight, the greater the effect produced, and the larger the dose administered by feeding the more likely is infection to follow. It has been proved that human tuberculosis is derived from two sources—tuberculous animals and tuberculous human beings. The relative proportions of these two dangers have to be exactly determined. That tubercle bacilli are found chiefly in the immediate vicinity of patients with open tuberculosis is the opinion of all who have investigated the subject. From the fact of the wide distribution of the tubercle bacillus it follows that a very large proportion of the population must have received infection, and some may have developed nodules of disease, and may afterwards give a positive tuberculin reaction, although the vast majority of them may never suffer from clinically recognisable tuberculosis. Such "tuberculisation" needs to be distinguished, for practical purposes, from tuberculosis. There remains, therefore, much work to be done.

[1] THE LANCET, Jan. 4th, 1913, p. 46.

In the year 1911, before notification was universally compulsory, about 35,000 cases of tuberculous phthisis were known to exist in this country, 13,000 of which occurred in Poor-law practice, 12,000 were notified under the new hospital regulations, and 10,000 were reported under local Acts or by voluntary arrangements. Dr. NEWSHOLME expresses the belief that the enforcement of notification of all recognised cases of the disease from the beginning of 1912 will furnish more complete information of its incidence than has previously been obtainable. Although the experience of the first quarter under the new *régime* probably represents a considerable accumulation of cases, it is interesting to learn that within the first three months of 1912 more than 38,000 cases of pulmonary tuberculosis were notified in England and Wales. We now also know from a valuable report of the Public Health Committee of the London County Council that during 1912 there were 33,444 cases of tuberculous phthisis notified in the county, while it is estimated that there are in the area 50,000 persons suffering from tuberculosis. A complete scheme for dealing with this mass of disease has been prepared, and similar steps are being taken all over the country to make diagnosis, prevention, and treatment go together upon a coördinated and economical plan. So that if much remains to be done, at any rate, much is doing.

## The History of the Enzyme.

THE belief was expressed more than a decade ago that the group of unorganised ferments which it is now agreed to call enzymes probably played an important rôle in the defence of the human organism against pathogenic micro-organisms, and further, that their action possibly as proteolytic agencies went so far as to destroy toxins. Our knowledge has developed a great deal since, and modern researches have advanced along lines which have strengthened this belief, for at the present time the view rapidly gains ground that the enzyme furnishes a factor of the utmost biological importance to the human organism. For us, the great interest attached to the enzyme is, of course, its function in the human host, but it is curious to reflect that the first really serious study given to these mysterious manipulators of molecular alignment arose not out of pathological curiosity, but from a consideration of certain changes occurring in industrial processes. The story of the enzyme was developed during the study of alcoholic fermentation, and we owe most of our knowledge of the occurrence and mode of action of the enzyme to the brewing industry. To know the pathology of beer was of vital importance to the success of the brewer, and the question was attacked with such perseverance, skill, and activity that it is doubtful whether at the present time any other industry stands on a sounder or less empirical basis than brewing. The pathology of beer was, in fact, studied with such success that the diseases to which it was in the old time heir are now practically eliminated—at all events, in the hands of the progressive technologist. The enzymes concerned were, in the first place, diastase of malt, and, in the second, zymase of yeast. It was the study of the latter enzyme which demonstrated how misleading was the distinction between organised and unorganised ferments. The vitalistic theory of ferments was badly shaken when it was shown that it was not the cell but the secreted substance of the cell which effected the changes summed up in the term "fermentation." The inference of this was that the work of the enzyme is chemical and not physical, and attention forthwith was given to the part played by the enzyme in intracellular metabolism.

At one time the list of ferments was a comparatively small one. The enzyme diastase (or amylase, according to modern nomenclature), which was found to be responsible for changing starch into sugar, as in the brewing process, is probably our oldest acquaintance. It was first observed in 1814, and in 1831 it was discovered that saliva possessed a similar property which we know now to be due to the enzyme ptyalin. A similarly acting enzyme was found in the pancreas in 1845 and in the intestinal juice in 1895, so that the existence of animal diastases was established. The more complicated lysis of proteins, as performed by pepsin and pancreatin or trypsin, does not appear to have received serious attention until 1860. Enzymes were afterwards isolated from plants which showed a similar hydrolytic action, and then the hydrolysing action of acids simulating enzymes upon both carbohydrates and proteins came prominently into notice. In the present day we seem to be going a step farther, for it appears that the work of hydrolysis can be done by metallic ferments, colloids, or by radiations, in the form of ultra-violet rays, or radium emanation, all of which has vast suggestion in the treatment of disease by certain modern methods. It is probable that the list of enzymes with which we are now familiar is only a small representation of the number of these activities which actually exist both in the animal and plant kingdoms, but at the present time we may say broadly that some fifty distinct varieties have been recognised of which the individuality and mode of action have been made clear. Since little is known concerning the nature of the enzymes, their classification so far is based on the chemical reactions which they bring about. The modern nomenclature of the enzymes is of interest. It is generally agreed now to give them the termination "ase," as, for example, lactase, the enzyme which converts lactose into galactose; lipase, the enzyme which converts fat into fatty acids and alcohol. The substance acted upon, which gives the root name to the enzyme, is called the substrate. The terminology adopted has exceptions in the classic examples of pepsin and trypsin.

It is extraordinary what a variety of actions the enzymes are capable of performing. Thus, in addition to those already mentioned, there are enzymes which convert urea into carbon-dioxide and ammonia (urease); further, there are those which oxidise purins, alcohol, aldehyde, phenol, tyrosin (the oxidases); another group sets free oxygen from hydrogen peroxide (the peroxidases and catalases, the action of which is analogous to that of the colloidal metals); again, there are enzymes which convert cellulose into sugar, as in the digestive process of graminivorous feeders (cellulase), and enzymes like chymosin,

which effects the clotting of milk, and thrombin, which coagulates fibrinogen into fibrin in the blood. Then there are the synthetic enzymes, which build up just those molecules which, it would seem, they are unable to break down, while some enzymes are able, like the toxins, to cause the production in the living organism of antibodies which retard the action of the enzymes. Anti-enzymes appear to behave like enzymes in the rôle of organic catalysts, and the relations between enzymes and anti-enzymes are identical with those between toxins and antitoxins. The specifically acting secretions produced in the organism in the presence of enzymes by immunisation belong to the group of anti-enzymes. On the other hand, and lastly, there are the co-enzymes or activators, without whose coöperation the enzymic processes do not take place, and which, in fact, accelerate a reaction. A good example of activators is enterokinase, the constituent of the intestinal liquid which activates tryptase or trypsin, as was demonstrated in the researches of PAWLOW, BAYLISS, and others. Yet another fruitful study is that which is disclosing a group of substances which protect the enzymes on the one hand and those which, on the other, act as "paralysors," inhibiting agents, or poisons.

Step by step, thus, has the edifice of enzymology grown to its present developments, and how important the results of its study have become must be admitted in view of the relationship which recent researches have shown to exist between the action of the enzymes and the pathogenicity of the disease-producing organism. It is clear, at all events, that certain enzymes in the human host exercise a profound influence upon the metabolic processes, and it is well, therefore, to refresh our memories with the links in the chain of events, the connecting of which has led to the recognition of a great biochemical system which must in future be reckoned with in any scheme of progressive medicine.

## Heart Disease in Children.

THE discussion which recently took place at the Royal Society of Medicine in the Section for the Study of Disease in Children on the subject of Heart Disease in Children, a full report of which appeared in THE LANCET of Jan. 4th, and also in the January number of the Proceedings of the Society, contains matter which deserves the attention of all practitioners of medicine, general and consulting. It is interesting both for the evidence it affords as to the consensus of opinion which exists on certain aspects of the question which are hardly enunciated with sufficient emphasis in medical text-books, and for the arguments for and against some more novel views which have not yet obtained universal recognition. Among the accepted opinions we may note the view that rheumatic fever in children affects not only the endocardium, on which lesion most emphasis is usually laid, but also the muscular substance of the heart, and further, that it is almost as essentially a disease of the heart as it is of the joints. Consequently it is to be assumed that there is some affection of the cardiac muscle in all cases, even when none of the accepted signs of such involvement are to be discovered. The influence of this view on the treatment of the disease is noteworthy, as it involves the enforcement of a prolonged period of complete rest even after the fever and symptoms of the malady have subsided. It can hardly be doubted that such care is urgently called for in all cases of acute rheumatic disease in children, and that many of the cases of chronic incurable valvular defects which are at present so common, especially in hospital practice, might have been avoided if the original illness had been more efficiently treated. Unfortunately not only has the need of prolonged rest been unrecognised in the past, but the insidious nature of rheumatic infection in the young has been disregarded, and such symptoms as fever, anæmia, and slight pains in the limbs have been neglected both by parents and doctors, the child being said to suffer from the mythical condition of "growing pains" or the favourite domestic ailments, bilious attacks and sore-throats.

As to the treatment of acute rheumatism when recognised, useful advice is to be found in this discussion, the invaluable rest in bed being assisted by low diet of a vegetable nature, by adequate purgation, by diuretics, and by salicylate of sodium. Whether this last remedy has any efficacy against cardiac involvement is a question upon which different speakers held divergent views, and it is probably wise to avoid heroic doses of a depressant drug if the heart's action is unsatisfactory. Nevertheless, in view of the remarkable effects of this drug in reducing fever and articular troubles, it is natural to credit it with some efficacy against the same toxin in other tissues, and it seems advisable to give it a trial in cases of acute cardiac involvement which are definitely rheumatic in origin. A similar doubt prevails as to the utility of digitalis in cases of myocardial disease, the older view being that in such conditions the muscle cannot respond to the stimulant, while more recent practice seems to favour a trial of some preparation of digitalis even when there is proof of myocardial affection. It should hardly be necessary to point out the uselessness or worse of ordering digitalis as a routine treatment in all cases in which a cardiac murmur is heard, however good the compensation that exists; but experience shows that there is still a tendency to regard the drug as a panacea for all valvular lesions, whatever their nature and whatever the general condition of the circulation, so that a repetition of the warning may not be useless. The value of local applications to the chest wall is another subject on which opinion is divided. In cases of pericarditis the balance of opinion is probably in their favour. On the other hand, it is difficult to believe that the application of an ice-bag or a blister can affect a condition of inflammation of the endocardium. Nevertheless, these remedies have their defenders. A point on which opinion was even more divided, and as to which the truth can hardly be said to be established, was the question as to the existence of functional disorders of the heart in children. This was stoutly affirmed and denied, some speakers regarding almost all irregularities of rhythm as indications of myocardial disease, others holding that they were frequently of little importance. Probably the truth lies as usual between the extreme views. It is necessary to distinguish the different groups of cases in which irregularities of rhythm occur, those which are purely

physiological or due to temporary nervous disturbance being separated from those which imply organic lesions of the heart. For this purpose it is important not to lay too much stress upon individual signs, but to study all the features of the case. This is equally true in dealing with murmurs, which have gained an undue prominence in medical thought owing to the ease with which they can be recognised and demonstrated to students. More important in many cases than such auscultatory signs are the evidences of cardiac insufficiency afforded by respiratory distress on slight exertion and by dilatation of the cavities of the organ.

We are glad to recognise that the general tendency of medical opinion is towards taking a more hopeful view of many cardiac conditions. Even well-marked murmurs discovered in young children may undoubtedly disappear in the course of years; much more may mere irregularities of rhythm prove transitory and unimportant. While, then, we must condemn the acute cases to a more rigorous regimen, we may be able to rescue from the bonds of practical invalidism a large number of those who have in past times been so condemned, and to let them enjoy life with their fellows free from the abiding shadow of a "weak heart."

# Annotations.

"Ne quid nimis."

## THE TRAGEDY OF CAPTAIN SCOTT'S EXPEDITION.

WE need not retail the terrible events which have closed Captain Scott's Antarctic Expedition. The whole world knows them, and all our hearts have been moved to their very depths by the terrible sadness and unmeasurable bravery of the story. Everything had been accomplished and only a few short miles separated Captain Scott and his heroic comrades from immediate safety and a personal realisation of the public glory which they had earned. Then the forces of Nature intervened, and in a moment the efforts of man, strenuous as they were, bold in detail and careful in conception, became fruitless. The medical profession is brought into intimate touch with the tragedy by the death of the principal scientific member of the expedition. Dr. Edward Adrian Wilson was alike sanitarian, zoologist, and artist with the little band of explorers, and in him our readers will mourn a fine flower of that temperament which knows no fear in the quest of truth, and which has so direct an appeal to the medical mind. Less fortunate than Rae and McCormick, whose fame as medical explorer in Arctic regions he has emulated, Wilson has laid down his life for the advance of the world's knowledge.

## ENERGY MATERIALISED.

IT is tempting to believe that (as has been announced in some quarters) proof has been obtained of the conversion of energy into matter, but although we are bound to recognise that recent researches might read as though such an accomplishment had been achieved, it must be admitted on a careful consideration of the details of experiment that the evidence is not yet convincing. We question whether the three scientific men, Sir William Ramsay, Professor Norman Collie, and Mr. H. Patterson, who have pursued their investigations perfectly independently of each other, would at the present juncture say positively that the one and only interpretation of their experiments was "the creation of matter" or "the birth of the atom." There have been for some time past indications that radium or its emanation, niton, caused an absorption of energy sufficient to disintegrate what are probably exothermic elements into elements of lower atomic weight. It seems pretty well established, at any rate, that when niton disintegrates in presence of water neon is produced. It was announced also that copper salts under the influence of radio-energy yielded distinct traces of lithium, but it is significant that experiments of such far-reaching importance do not appear to have been repeated by other observers. The extreme costliness of radium may, however, be a good reason for this, for it is obvious that the work of disintegration requires a comparatively large amount of radium salts, and this the world is not known to possess. It may fairly safely be predicted, we think, that the energy necessary for degrading an element will be found in electricity, and this fact appears to have been put upon its trial in the experiments recently reported at a meeting of the Chemical Society. But the announcement is not as new as the prominence given to it in the daily papers last week would imply. When we wrote in the Annus Medicus in THE LANCET in December last with reference to the position of radio-active researches that "we imagine that there are workers engaged upon this subject who are quietly and steadily pursuing the quest for evidence of enforced transmutation, and it would not be surprising if the next announcement refers to something definitely achieved in this direction," we had in mind Sir William Ramsay's interesting essay on "Elements and Electrons," which was published in November, 1912. The following paragraph taken from this publication indicates clearly the lines of investigation reported at the Chemical Society last week:—

> An X ray tube or bulb contains an aluminium cathode, from which, when it is in action, a stream of electrons is projected on to a plate of some resistant metal, from which X rays proceed, apparently by reflection, towards the glass walls of the bulb. These are the rays used to take "skiagraphs" or shadow pictures of the bones or internal organs of the body. The glass of such "X ray" bulbs becomes dark purple after prolonged use; evidently electrons have entered it and have liberated atoms of sodium. Have they produced any further change?
>
> To answer that question, the glass of four bulbs which had been long in use was broken up and introduced into a tube of hard glass placed in a furnace. The tube was pumped empty, and repeatedly washed out with pure oxygen, so as to remove all traces of air adhering to the glass. It was then heated, and the evolved gas was tested for the presence of helium and neon; both were found, the latter in a very minute amount. .....

A similar experiment by Professor Norman Collie is also mentioned:—

> The way is now clear for an exhaustive research on the transmutations of the elements, for experiment is open to all who can command the means of utilising powerful cathode discharges.

In the recent research hydrogen in small quantity was introduced into the bulb, and helium and neon appeared as a result of some action going on in the bulb. It is thought from this that (1) either the transmutation of the aluminium of the cathode, or one of the numerous elements present in the glass, into neon and helium takes place, or (2) that hydrogen is converted into these gases, or (3) that the electricity itself in the form of electrons or particles of electricity gives rise to the birth of these elements. Further results will be awaited with extreme interest, and it may be anticipated that the number of workers in this field will be increased since the experiments are independent of a supply of radium, an X ray tube and a powerful electric current being all that is necessary. The chief points to be cleared up are whether the new gases are the direct products of electric energy (which may mean the conversion of energy into matter), or whether they are

merely occluded materials expelled from the bulb, or whether they are transmutations of hydrogen or aluminium.

## SOFTENING OF THE SPINAL CORD IN A SYPHILITIC AFTER AN INJECTION OF SALVARSAN.

A YOUNG man aged 23 received from June 1st to Sept. 3rd, 1908, a series of intramuscular injections of corrosive sublimate for a syphilitic roseola which had followed on a typical indurated sore. On March 24th, 1910, he returned because of a cutaneous syphilide and extensive adenitis, and was treated with similar injections for six days. Then, instead of them, he was given two injections of salicylate of mercury, a week intervening between these. He was seen again on May 30th, 1911, adenitis being still noted, and on June 10th at noon 0·3 gramme salvarsan was injected into each buttock. At the time there were no manifestations of syphilis whatever except the condition of the glands. On the evening of June 12th, having been perfectly well in the intervening 56 hours, the patient felt a numbness in his legs and fatigue in them, and soon after had difficulty in passing urine. During the next day the condition rapidly advanced, and on June 14th there was a complete motor and sensory paraplegia. With bladder and rectum paralysed, and bedsores and other trophic disorders setting in, his condition was serious from the beginning, and in spite of every effort he died on August 29th. Subsequent pathological examination showed an acute syphilitic softening at the level of the fourth and fifth thoracic segments, the morbid change being more advanced in the postero-lateral columns than in the anterior. Meningeal and vascular lesions were marked throughout. Such is the history as given by Dr. Leo Newmark, of San Francisco (who was called in consultation), in the *American Journal of the Medical Sciences* for December last, and the question naturally suggests itself: If a young man who has been infected with syphilis three years previously presents the first symptoms of a fatal softening of the cord 56 hours after an injection of salvarsan, is the drug in any way to blame for the condition which followed its injection? There is no doubt, of course, that clinically and anatomically the evidence in favour of the sufficiency of syphilis to produce the disease of the cord is complete, and there would appear to be no room for the intervention of salvarsan. Moreover, if the close sequence of drug and disaster, as Dr. Newmark says, impresses us with a sense of cause and effect, it must not be forgotten that occasionally serious damage to the central nervous system has followed an injection of mercury. But long use of mercury has shown such incidents to be so rare as to be negligible, whereas there is to-day a growing list of affections of the cranial nerves, brain, or cord subsequent to the administration of salvarsan. Dr. Newmark is inclined to admit that the salvarsan in his case was somehow an agent in the final result, and adduces the Herxheimer reaction as a possible explanation.

## THE ALL-INDIA SANITARY CONFERENCE.

AT this important gathering, held in Madras from Nov. 11th to the 14th last—a brief report of which we begin this week from our Indian correspondents—the subjects for discussion were considered in two sections, a medical and an engineering section, which also met jointly. Sir Harcourt Butler, the Member for Education on the Governor-General's Council, presided, and there was a full attendance of delegates from all parts of India and Burma. In his opening address the President alluded to the recent reorganisation of the offices of the Director-General, Indian Medical Service, and of the Sanitary Commissioner with the Government of India, and to the development of the sanitary service generally. Large grants will be made for antimalarial measures; during the past year more than two lakhs of rupees have already been allotted in the United Provinces, Bombay, Bengal, and Madras in aid of investigations into the conditions causing malaria, and of antimalarial schemes; in future such financial assistance will only be given for actual works of amelioration or removal of malarial conditions. An interesting paper was read by Mr. E. G. Turner on Town Planning in Bombay; the lines on which this is being carried on are a combination of the German principle of "redistribution" (which gives power to alter the shape of holdings of land, so as to render them more suitable for building plots) with the English principle of "betterment" (which enforces contributions from owners towards the cost of a scheme, in proportion to the extent to which their land is bettered by the completed scheme). Mr. J. P. Orr, chairman of the City of Bombay Improvement Trust, read a very practical paper on Light and Air in Bombay. In that city of 980,000 inhabitants, 85 per cent. of the population live in single tenements. The Improvement Trust had only touched 10 per cent. of the congested areas. The difficulties are enormous, but under Mr. Orr's guidance great amelioration is rapidly being effected. He laid down that partial improvement was no good. A standard must be fixed and rigidly adhered to, obstructive dwellings must be removed, new building operations controlled, and great improvement made in the admission of light and air. Among other subjects dealt with were the scope of preventive measures against plague, the recent diminution in enteric fever prevalence, the treatment of urban water-supplies, and sewage and refuse disposal according to recent methods, as at present carried out in India.

## CIRCUMSCRIBED PERITONITIS DUE TO INTESTINAL PERFORATION IN TYPHOID FEVER.

THAT perforation of a gastric ulcer sometimes produces only local peritonitis and adhesions is recognised, but a similar condition as the result of perforation of the intestine in typhoid fever is not well known. At a meeting of the Société Médicale des Hôpitaux of Paris on Dec. 13th last M. Ch. Achard and M. G. Desbouis reported the following case. A man, aged 31 years, was admitted into the Necker Hospital on Sept. 16th, 1912, complaining of diarrhœa and abdominal pains, from which he had suffered for a fortnight. His illness began on Sept. 2nd with pains in the right iliac fossa, rigors, fever, and vomiting. For some months previously he had lost flesh and suffered from a persistent cough and night sweats. At the time of admission his wife and two children were under treatment for typhoid fever. On admission he was in a prostrate and somnolent state. The tongue was normal and the breath was fœtid. The abdomen was a little tense, but showed no tender spot, gurgling in the iliac fossa, or rose spots. The spleen was enlarged. At the apex of the right lung there were signs of a softening tuberculous lesion. The pulse was 98, strong and hard. The temperature was 101·5° F. On the 17th four or five rose spots appeared on the flanks, and on the 18th there was an abundant eruption and the abdomen was distended. The serum reaction was positive. The patient remained in a state of complete adynamia and the temperature fell to 100°, while the pulse rose to 120. On the 23rd he was seized with violent pain, at first above and to the left of the umbilicus, then rapidly spreading to the whole abdomen. Nausea and porraceous vomiting followed. The abdomen became hard, very tense and very tympanitic, and the hepatic dulness completely disappeared. The diarrhœa ceased, the temperature fell to 98·2°, and the pulse was 150 and filiform. On the 25th there was absolute constipation and micturition was impossible. Very fœtid vomiting occurred four or five times, and on the last

occasion it was almost fæcal. There was also hiccough. The patient's condition was considered too grave for operation; opium was given and ice applied to the abdomen. He remained in this state on the 26th and 27th, the vomiting being a little less frequent. Liquid was found in the flanks. On the 28th the vomiting had ceased, the abdomen was more supple, and dulness could no longer be found in the flanks. Urine had been passed. On the 29th the constipation had ceased and the mental condition was improved, he could answer questions better, and the abdomen was perfectly supple. On the 30th the general condition was satisfactory, the temperature was 99·3°, and the pulse was 96 and good. The stools were formed. On Oct. 1st the patient complained of pain in the ear, and the left parotid gland was found swollen and tender. The temperature had risen to 100·4°. On the 2nd the right parotid was similarly affected and torpor had recommenced. The temperature was 100·4° and the pulse 140. On the 3rd the patient died comatose. The necropsy showed tuberculous infiltration of both apices and a cavity of the size of a walnut at the right. The coils of the ileum were agglutinated into a mass in the right iliac fossa. This mass was partitioned by adhesions. On carefully breaking these, eight perforations were found within a distance of 12 centimetres from the ileo-cæcal valve. They varied in size from the head of a pin to a 50-centime piece, and were closed either by mesentery or adhesions to neighbouring coils. The spleen was very large and diffluent. In this case all the symptoms of perforation occurred with characteristic suddenness—violent abdominal pain on the left side, vomiting, hiccough, abdominal rigidity, meteorism obliterating the hepatic dulness and followed by dulness in the flanks, retention of urine, arrest of diarrhœa, sudden fall of temperature, and frequency and smallness of pulse. These symptoms disappeared, formed stools were passed, the temperature and pulse became normal, urine was passed in abundance, and the abdomen regained its suppleness. All seemed going on well until the attack of double parotitis. The necropsy revealed only circumscribed peritonitis and eight perforations undergoing cicatrisation. This case shows that grave symptoms of perforation may disappear rapidly, and that even multiple perforations may produce only localised peritonitis tending to recovery. Spontaneous recovery from certain intestinal perforations has been known for a long time. Chantemesse insisted in 1908 that this could be produced by adhesion to the omentum.

## ATMOSPHERIC POLLUTION.

AT the conference of delegates of local authorities and learned societies convened by the Coal Smoke Abatement Society in connexion with the International Smoke Abatement Exhibition in March last, attention was drawn to the desirability of steps being taken to decide upon and secure the general adoption of a standard method for the measurement of atmospheric pollution by smoke and other products of combustion and dust. A committee was appointed "to draw up details of a standard soot and dust measurement apparatus and methods of its use." The committee is presided over by Dr. W. H. Shaw (Director, Meteorological Office), and its other members include Dr. John Owens, Dr. H. A. Des Vœux, Dr. R. Lessing, and Mr. F. G. Clark (representing the Coal Smoke Abatement Society), Professor J. B. Cohen (Leeds University), Bailie W. Smith (convener of the Air Purification Committee of the Glasgow Corporation), Dr. Hawksley (assistant medical officer of health, Liverpool), Mr. J. B. C. Kershaw (Hamburg Smoke Abatement Society), Mr. S. A. Vasey (THE LANCET), and Mr. E. D. Simon (Smoke Abatement League). The method of investigation, which, after full inquiry, has now been adopted by the committee as most likely to give satisfactory results is that used in the inquiry, conducted in 1911-12 under the auspices of THE LANCET, with the object of ascertaining the degree of pollution of the atmosphere in and around the metropolis. The standard apparatus recommended takes the form of an enlarged rain gauge, having a catchment area of 4 square feet, which receives all rain, soot, and other matters falling thereon, and deposits them in a large bottle, the contents of which can be regularly analysed. The committee's report and recommendation have recently been submitted to all important cities in the United Kingdom, with the result that Birmingham, Bradford, Glasgow, Leicester, Malvern, and Newcastle-on-Tyne have already agreed to set up the standard apparatus in accordance with the committee's advice, and a large number of other towns are favourably considering the proposal. The importance of obtaining on a standardised system reliable information as to the state of the atmosphere in different parts of the country can scarcely be overestimated. The results will, it is hoped, throw light upon the purity or pollution of the air in different localities. They are also expected to give explanations of the prevalence of chest diseases in certain districts, and will record in a uniform and scientific manner the effect of efforts to purify the air from smoke, sulphurous gases, dust, and other noxious matters. Dr. John Owens, 47, Victoria-street, Westminster, is acting as honorary secretary to the committee.

## PASSIVE HUMAN CARRIAGE OF THE VIRUS OF POLIOMYELITIS.

IN the *Journal of the American Medical Association* for Jan. 18th is a brief note by Dr. Simon Flexner, Dr. Paul F. Clark, and Dr. Francis R. Fraser, of the Rockefeller Institute, concerning the question of poliomyelitis carriers. A little girl, aged 4 years and 4 months, was admitted to the hospital of the Rockefeller Institute on Oct. 18th, 1912, less than one week from the development of an attack of poliomyelitis involving mainly the lower extremities. On Oct. 28th the mother and father of the patient were subjected to a naso-pharyngeal irrigation with normal saline solution. Some 150 c.c. of fluid were collected, shaken, and pressed through a Berkefeld filter. The fluid was forthwith injected into a macaque monkey, 1·5 c.c. into each sciatic nerve and 140 c.c. into the peritoneal cavity. On Nov. 11th the animal was noted to be excitable and to drag the right leg, and the next day both legs were definitely paresed. A leucocytosis was found in its cerebro-spinal fluid. On the 13th it was killed under an anæsthetic, when the spinal cord was seen to be œdematous, and sections subsequently were found to present the typical lesions of experimental poliomyelitis. On Dec. 3rd an emulsion of the glycerinated spinal cord of this monkey was injected into each sciatic nerve and into the peritoneal cavity of two other macaques, which in their turn, after an interval of 10 and 16 days respectively, were found to be paresed or paralysed in the legs, and in each instance the typical infiltrative lesions of poliomyelitis were found in the spinal cord. From these experiments it may be fairly concluded that the washings from the naso-pharynx of the parents, neither of whom showed any symptoms of illness and were not suffering from the disease, contained the virus of epidemic poliomyelitis. Thus an experimental basis has been established for the belief, based on clinical observation, of the occurrence of passive human carriers of the infection. The obstacles in the way of demonstrating this important phenomenon experimentally have been considerable. At present the sole means of detecting the virus is by its implantation in monkeys, and it is known that the initial infectivity for monkeys of human

strains of the virus varies greatly. Large quantities of an emulsion may be required for inoculation. It is to be presumed, further, that passive carriers will harbour the virus in smaller amount than persons actively ill with the disease. And, again, saline washings of the naso-pharynx must dilute the virus materially. In view of these facts, experimental failure is more likely to occur than is success, but at the same time they give to a successful result an intensified value.

## THE AFRICAN BLACKWATER FEVER INQUIRY.

IN THE LANCET of Jan. 25th we made some observations upon a series of reports on blackwater fever forwarded from some of our tropical African colonies to the Colonial Office, being contributions to an inquiry which has been instituted by the Secretary of State into the nature and causation of that disease. Since then another report [1] has been published separately dealing with the disease in Southern Nigeria and prepared by Dr. W. M. Graham, director of the Medical Research Institute at Lagos. In this report the scope of reference indicated by the Colonial Office has not been strictly adhered to; instead, in view of the importance of the subject and the unfixed state of medical opinion about the disease, Dr. Graham has supplied what amounts to a short treatise upon the present-day knowledge of the malady. His aim has been rather to suggest methods of inquiry than attempt to prove the correctness of any one of the various theories which have been put forward concerning the nature of blackwater fever. The field for observation in the West African colonies is known to be wide in extent as well as rich in material, and it is suggested that if medical records were accurately kept upon a uniform plan the next 10 years would see the removal of some, if not all, of the obscurity that now envelops the causation of the malady. The different views at present held as to the origin of blackwater fever are passed in review by Dr. Graham, and the arguments for and against each are fully discussed. In connexion with the opinion which attributes the disease to an infection by a specific organism, the question of direct and indirect transmission is dealt with in an interesting fashion. Indirect conveyance of the infection might occur through the common use of domestic utensils, but of more importance, we think, is the probable transmission through the agency of parasites, such as fleas, lice, bugs, ticks, &c. The African servants sleep together or with their relatives in the native quarter of the town or settlement. Both native women and children often harbour pediculus vestimenti or pediculus pubis. It would be easy for a native servant in the immediate environment of his master, to transfer parasites from his own person to that of his master or to his master's clothing or bedding. For successful direct infection, however, personal contact with the native would be necessary, and this in the majority of instances could only occur during sexual intercourse. In West Africa sexual relations with native women appear to be not very rare, and in non-official circles they are commonly acknowledged. The native woman often lives in the white man's house, directs his servants, and helps him in his business. The opinion seems to be fairly general among non-medically educated Europeans in West Africa that blackwater fever is frequently caused by habitual sexual relations with native women, and Dr. Graham seems inclined to admit that there may be some kind of ground for this belief. He says that if the malady be due to a specific infection, it would almost certainly be present in its most intense form among native women and children in process of acquiring immunity. Contact with native children would be the most effective way of contracting the disease. For most Europeans, missionaries excepted, opportunities for contact with native children are extremely rare under social conditions; but once a native woman is admitted to intimate relations with a European the opportunities for such contact would naturally increase. Dr. Graham goes on to say that whatever hypothesis as to the origin of blackwater fever be accepted, malarial or specific, the presence of native women, and their corollary native children, in a European's household in Africa is undesirable; and the danger of their presence is not diminished when the accompanying children are the natural offspring of the European himself. Dr. Graham also discusses the possible relation between the abuse of alcohol in the tropics and blackwater fever. The misuse of alcohol is responsible in his opinion for a great deal of ill-health on the West Coast of Africa; it binds the oxygen more firmly to the hæmoglobin of the red corpuscles, and thus diminishes their power of oxygenation. The result is a feeling of lassitude and disinclination for mental work. Wright, as quoted by Ehrlich, has demonstrated that the ingestion of alcohol is followed by a diminution of the coagulability of the blood. Lastly, Dr. Graham points out that a drunken man exposes himself needlessly to the attacks of mosquitoes, and that he forgets to take his prophylactic quinine regularly; moreover, he is apt blindly and recklessly to indulge in sexual intercourse with native women.

[1] Report on Blackwater Fever in Southern Nigeria, 1899-1911, by Dr. W. M. Graham, Director of the Medical Research Institute, Lagos. London: Waterlow and Sons. 1912. Pp. 72, with a number of plates, charts, and maps.

## SACRODYNIA IN CANCER OF THE PANCREAS.

THE diagnosis of cancer of the pancreas is often missed because symptoms pointing to the disease are wanting. Of these the most important is pain extending from the epigastrium to the back. The following case, reported at a meeting of the Société Médicale des Hôpitaux of Paris on Nov. 22nd by MM. Marcel Labbé and André Gendron, shows that the pain may be situated so far from its usual site that no suspicion of the disease may be aroused. A man, aged 55 years, a masseur, enjoyed good health until Christmas, 1911, when on putting coal on the fire he felt a pain at the base of the chest on the left side. This pain persisted in spite of the administration of anodyne cachets and the use of liniments. He continued to work until April, 1912, but had to lie down several times a day to relieve the pain. In February the pain extended to the middle line, and then to the right hypochondrium, so that pain of the girdle type was produced. The pain was at its maximum on the left side; in the middle line it was acute and on the right side dull. From April the patient localised the pain in the sacral region. It increased, and rendered walking painful and work impossible. It was continuous, with violent exacerbations. There were crises, which began by an increase of the sacral pain. This reached its maximum in about an hour, and then the patient lost consciousness for several hours. An injection of morphine was given, after which he slept for two or three hours. The crises were not accompanied by either nausea or vomiting. On August 16th he was taken to hospital in a crisis and delirious, in which state he continued until the 20th. Examination on that day showed a condition of mental confusion. He attempted to get out of bed, trembled, and had carphology. He passed urine in the bed. There were no signs of organic disease of the nervous system. Lumbar puncture was performed and yielded turbid albuminous fluid containing intact polynuclear cells. On the 21st he had regained consciousness and clearly gave his history. He complained only of pain in the sacral region, which, as well as the perineum, was tender, but no objective alteration of sensibility could be found. The pain rendered the sitting

or lying position difficult. The patient constantly lay with his legs flexed and his body bent, so that his head was between his knees. Every movement increased the pain. Abdominal palpation revealed nothing abnormal. On the 23rd lumbar puncture was performed and yielded a clear non-albuminous fluid. The patient became more and more cachectic. The pain was relieved only by morphine. Neither nausea nor vomiting ever occurred. One or two pasty stools were passed daily. During the first half of September the temperature was 100·4° F., then it fell to 98·6°. The urine did not contain sugar. Death occurred on Oct. 20th. The necropsy revealed a mass of the size of an infant's head in the left hypochondrium, enveloping all the pancreas except the head. The bile-duct was not compressed. The posterior wall of the stomach, terminal portion of the duodenum, transverse colon, and spleen were adherent to the tumour. The aorta and mesenteric vessels were surrounded by the tumour. There were cancerous nodules in the liver. The vertebral column was not invaded. The localisation of the pain in cancer of the pancreas in the sacral region does not appear to have been previously described. In this case cancer was suspected, but, in consequence of the position of the pain, in the pelvis. However, the doubled-up position adopted by the patient to relieve that pain has been several times described in cancer of the pancreas. Possibly the pain was due to compression of sympathetic nerves which finally involved the filaments of the sacral region. But why the pain became confined to this region cannot be explained. A similar localisation is sometimes observed in Pott's disease, in which the pain may be felt lower than the level of the involved roots.

## CONTRACTION OF THE DENTAL ARCH AND NASAL STENOSIS.

Dr. Matthew Cryer[1] deals at considerable length with the relation of contracted dental arches to nasal respiration in a contribution to this periodical. In his opinion the effect of the narrow arch is to compress the tongue and force it back into the oro-pharynx. The tongue, he says, "pushes up the soft palate against the post-pharyngeal wall and cuts off respiration through the nose. As the tongue forces the epiglottis downwards and backwards it also interferes with oral respiration, which, however, is a little easier than nasal respiration under these circumstances; hence 'mouth-breathing.'" Spreading the dental arch he considers gives relief to the nasal obstruction by allowing more room for the tongue, which moves forward and releases the pressure on the soft palate and other structures. The view taken by some authors that the beneficial effect on the nasal respiration is due to the opening of the intermaxillary suture and a widening of the floor of the nose is, in his opinion, incompatible with the anatomical structure of the parts involved. He points out that the malar processes, the malar bones, and the zygomatic arches, with their attachments to the sides of the brain case, form the lateral abutments of the maxillæ, and that these abutments are braced by the pterygoid processes and the vertical plates of the palate bones. These are permanent structures of comparatively hard tissues, whereas the bone of the alveolar process is of a far softer character, and it does not seem to him that pressure upon the latter could succeed in opening the maxillary bones which are so firmly held in position. The supporters of the idea that the suture between the intermaxillary bones opens, base their statements mainly on the appearances seen in radiographs. The distortion of radiographs of the upper teeth is well known, and in addition there is the extreme difficulty of taking two pictures at the same angle, so that evidence of this character is liable to be untrustworthy. Dr. Cryer, too, shows by a study of normal skulls that radiograph appearances of the normal suture frequently suggest that an opening exists. There is, in his opinion, no foundation for the idea that a definite relationship exists between the dental or palatal arch and the nasal floor. In support of his opinion he gives illustrations of skulls with narrow palates and wide nasal floors, and others with narrow nasal floors and wide palates. The production of the narrow dental arch so often seen in association with long-continued nasal obstruction, he thinks may in some measure be due to the tension of the palato-glossus and palato-pharyngeus muscles. The contribution is a thoroughly interesting one.

[1] Items of Interest, January, 1913.

Mr. Edmund Owen's paper on Appendicitis: A Plea for Immediate Operation, which he read before the Medical Society of London on Feb. 10th (*vide* p. 441), was followed by a highly interesting discussion, in which Mr. W. H. Battle, Mr. C. P. Childe, Mr. J. Grey Turner, Mr. A. H. Burgess, Mr. G. R. Turner, Major A. J. Hull, R.A.M.C., Mr. A. M. Connell, Mr. W. H. Clayton-Greene, and Sir W. Watson Cheyne, the President, took part. A full report of the debate will appear in the next issue of THE LANCET.

THE death occurred on Feb. 10th of Mr. Malcolm Macdonald McHardy, formerly professor of ophthalmology at King's College, London, senior ophthalmic surgeon to King's College Hospital, and consulting surgeon to the Royal Eye Hospital.

# THE ORGANISATION IN LONDON OF THE TREATMENT OF TUBERCULOSIS.

IN reply to the letter recently received from the Local Government Board suggesting that the London County Council should prepare a complete scheme for dealing with tuberculosis in London,[1] the Public Health Committee reported to the Council on Feb. 11th in favour of accepting the suggestion and outlining the general principles upon which it considered provision for treatment of tuberculosis should be made.

The committee first discussed in detail the clauses of the National Insurance Act bearing on the question, and summarised the recommendations of the Departmental Committee on Tuberculosis appointed in April, 1912, with which the Local Government Board had stated itself to be in general agreement. As to the action taken by the Board, the committee pointed out that, although communications had been addressed to county councils throughout the country as early as May, 1912, no indication was given until December, 1912, as to what authority was to be responsible for dealing with the disease in London. The Council, therefore, was in no way responsible for the delay that had occurrred in making arrangements for the treatment of tuberculosis in London. Indeed, as soon as the Council was approached it decided to make temporary arrangements with the Metropolitan Asylums Board for the provision of a limited amount of accommodation. Authority to provide this was received on Dec. 11th, 1912, and although various alterations to buildings had been necessary patients were received on Feb. 10th, 1913.

### *Incidence of Tuberculosis.*

As to the requirements of London and the existing provision for dealing with tuberculosis, the committee said it was difficult to estimate accurately the number of cases within the county, because the disease in all its forms had only just become compulsorily notifiable. There were, however, 33,384 cases of phthisis notified during 1912, of which 12,366 were Poor-law cases, 12,214 were hospital

[1] THE LANCET, Dec. 21st, 1912, p. 1743.

cases, 500 were school cases, and the remainder (8304) were notified by general practitioners. The medical officer estimated that there were in London 50,000 persons suffering from tuberculosis, and of these about 20,000 were insured persons. As regards school children, with the extension of medical re-inspection and the increasing facilities for diagnosis likely to obtain in the near future, it was probable that many more cases of early tuberculosis would be detected each year than had hitherto been the case. The existing provision was in the hands of the various public authorities and of the voluntary agencies comprising the general and special hospitals, the tuberculosis dispensaries, and various philanthropic and religious bodies.

*Recognition of Existing Agencies for Treatment.*

It was obvious that if the best results were to be obtained the work of these authorities and institutions must be coördinated. For instance, under the existing arrangements, the provision of dispensaries was being dealt with by the borough councils. Although it was not suggested that this arrangement was undesirable, it was essential that there should be uniformity in regard to the dispensaries. Moreover, it was very important that the part played by the hospitals, general and special, should not be displaced by any newer dispensary provision. It was equally important that the valuable work of the practitioner should be assimilated in the new arrangements to be made. The dispensaries, if established as separate institutions, should fill up the gaps where the hospital provision was inadequate. It would be a great misfortune if the hospitals, with their highly experienced staffs, elaborate equipment, and special organisation, perfected through a mature experience, were not utilised in any future arrangements. No new institutions with their limited staff and resources could possibly provide the skill and experience available in the large general and special hospitals, and unless these were still to be utilised there would be irreparable loss to the persons suffering from tuberculosis, to whom hitherto these institutions had been available. It had to be borne in mind that in the large hospitals had been evolved to a great extent the forms of medical treatment now accepted as the best, and the progress of medicine was bound up with their keeping in intimate touch with the patients whom hitherto they had extensively treated. To conserve the work of these great institutions rather than replace it should be a definite aim in any reorganisation of the steps for dealing with tuberculosis now undertaken.

If it was considered desirable to coördinate the dispensary arrangements throughout London, uniform agreements should be made between the County Council and the borough councils, and the coöperation of the general practitioner, in cases not suitable for dispensary treatment, should be secured to the fullest extent possible.

*One Central Authority for Administration.*

The committee proceeded to point out that any measures for the prevention of infection from tuberculosis could not be confined logically to one class. The treatment of the disease could not be regarded as other than a matter of public health administration. This being so, the County Council, in its position of central public health authority, was obviously best fitted to organise the arrangements, as it was important that there should be no departure in London from the well-founded principle of having one central health authority for the administration and coördination of all matters relating to public health. In this connexion the committee indicated the important functions already exercised by the Council in regard to tuberculosis. In its function of education authority, also, it had, to quote the Departmental Committee on Tuberculosis, "the opportunity of playing a very important and indeed essential part in the detection, prevention, and treatment of tuberculosis."

*Consultation with Existing Organisations.*

For the reasons given the committee was of opinion that the Council should cause a detailed scheme to be prepared for the treatment of tuberculosis. It would be undesirable at this stage to indicate further any details of the scheme, because so many authorities and institutions were concerned that their views must of necessity be ascertained in the first instance. It was important, however, that the action which the Council was to take with regard to the general situation should be decided as soon as possible. The local authorities, hospitals, and all concerned in the provision of treatment for tuberculous persons in London were experiencing considerable difficulty in deciding what arrangements they were to make for the future because of the absence of any coördinating scheme. The question of finance was, of course, of paramount importance as bearing upon the scope of any scheme which might be prepared, and the ideal public health measure must be subordinated to the practical.

Major H. C. LEVITA, chairman of the Public Health Committee, moved the adoption of the following recommendation attached to the report:—

> That it be referred to the Public Health Committee to prepare forthwith and submit to the Council a scheme for dealing with tuberculosis throughout the Administrative County of London, that the Local Government Board be informed of the action taken, and that, for the purpose of preparing a scheme, the committee be authorised to confer with the sanitary authorities, the Insurance Committee for London, and such other authorities, institutions, or persons as the committee may deem necessary.

The Council approved the recommendation of the committee.

## MEDICINE AND THE LAW.

*Two Cases of Alleged Ptomaine Poisoning.*

IN the High Court of Justice recently Mr. Justice Darling with a special jury tried an action brought by a lady named French against the Improved Industrial Dwellings Company, Limited, for damages for personal injury alleged by the plaintiff to have been caused to her by the negligence of the defendants' servants. The plaintiff, a trained nurse, occupied rooms in a block of buildings owned by the defendants, in which meals were served to the tenants in a common restaurant, and she gave evidence alleging that she had contracted ptomaine poisoning by eating certain boiled mutton at a dinner in the restaurant on a certain day. Medical and other evidence was called on her behalf, but the lady superintendent of the flats gave evidence, supported by her books, that boiled mutton had not been served in the restaurant on the day on which the plaintiff claimed to have been made ill by it. The plaintiff had also admitted in her evidence that she had contracted dysentery twice in South Africa and since then had suffered from colitis. Dr. O. F. F. Grünbaum gave expert evidence to the effect that acute colitis might be mistaken for ptomaine poisoning, and as to the imprudence of the plaintiff in playing a match at croquet on the day after she was first taken ill, as she had admitted having done. A verdict was found for the defendants.

Two days later, before Mr. Justice Horridge and a special jury, a case was heard in which the plaintiff, Mr. Cheverton, assistant manager to the firm of Pathé Frères, sued M. Pasquier in respect of poisoning which he ascribed to sardines eaten at the Mont Blanc restaurant kept by the defendant in Gerrard-street, Soho. The plaintiff relied upon the implied warranty of the defendant that the food supplied by him was fit for human consumption (Section 14 (1) of the Sale of Goods Act, 1893), and in the alternative alleged negligence in supplying it; the evidence on behalf of the defendant included that of a witness from the firm originally supplying the sardines to the effect that only sardines of good quality were supplied by them to the restaurant, and also that they were responsible for the supply of similar goods to various clubs and restaurants, whence no complaints had been received. Friends who accompanied the plaintiff to the restaurant and partook of sardines also stated that they had been made ill. There was medical evidence to the effect that the plaintiff's condition had been consistent with ptomaine poisoning, but the opinion expressed by the medical practitioner who saw him when he first became ill was that he then was suffering from indigestion. The following questions were submitted to the jury and answered as stated below. "Were the sardines supplied to the plaintiff reasonably fit for human consumption?"—"No." "Was the illness of the plaintiff caused by such unfitness?"—"Yes." "Was the defendant negligent in supplying the sardines?"—"No." "What damages?"—"£26 10s." Upon these answers a verdict was entered for the plaintiff for the sum named, in respect of the breach of warranty, a certificate that the case was fit to be brought in the

High Court being refused. This refers to the amount of the damages, which in the absence of such certificate would entitle the plaintiff to costs on the county court scale only. Mr. Justice Horridge expressed the opinion that the case was one which a county court judge might have tried. The subsection of the Sale of Goods Act referred to in this case may be of interest, as it is often brought forward in cases where dealers in food are sued in respect of the defective quality of goods supplied. It will be observed that the concluding words prevent the possibility of applying the section to the sale of quack medicines by retail dealers. "Where the buyer, expressly or by implication, makes known to the seller the particular purpose for which the goods are required, so as to show that the buyer relies on the seller's skill and judgment, and the goods are of a description which it is in the course of the seller's business to supply (whether he be the manufacturer or not), there is an implied condition that the goods shall be reasonably fit for such purpose, provided that in the case of a contract for the sale of a specified article under its patent or other trade name, there is no implied condition as to its fitness for any particular purpose."

*Fleet* v. *Johnson and Sons: Workmen's Compensation.*

In a recent case under the Workmen's Compensation Act, 1906, before the Court of Appeal, the county court judge had made an award in favour of the dependents of a deceased workman, a bricklayer. He had returned home with a sore on the back of his thumb on a certain date, and a month later had died from blood-poisoning after an abscess had developed in his armpit. The initial injury was one which might naturally be incurred in using a hammer and chisel as he had been using them, and the medical evidence was to the effect that the injury to the thumb might well have given rise to the blood-poisoning from which death took place, the medical witness before the arbitrator also making the admission in cross-examination that a dirty condition of the armpit might have caused the abscess referred to. There was, however, no evidence of such a condition having in fact existed. The medical witness had stated that as a matter of scientific opinion he had no doubt that the blood poisoning had been set up through the injury to the thumb. The Court of Appeal held that the county court judge was justified in accepting the medical evidence and in ascribing death to the accident alleged. The Master of the Rolls, who delivered the judgment of the court, laid emphasis again upon the point that the question was one not of law but of fact, as to which the court would not interfere with the finding of the county court judge unless he was shown to have misdirected himself. It was for applicants for compensation to establish their case, but it was not necessary for them to bring witnesses who had actually seen the alleged accident take place. They might prove facts from which it might be inferred. It must be proved where death ensued that it was due to the accident, but it need not be shown that it was a result to be expected. It might be an improbable and unexpected result, but that did not matter if it was shown that the accident did in fact have death as its consequence. The two questions which the county court judge had to answer, and which in the opinion of the Court of Appeal he had evidence before him to justify him in answering them as he had done, were: Did the workman meet with the alleged accident while he was at work? and, secondly, Did death result from that accident? The case may be taken as an example of the nature of the facts to be established not infrequently under the Workmen's Compensation Act, and of the points to which medical evidence may have to be directed when deaths of the kind described take place.

*The Sale of Hypnotic Drugs.*

At the February meeting of the council of the Pharmaceutical Society a resolution was carried in the following terms:—

> That by virtue and in exercise of the powers vested in the council of the Pharmaceutical Society of Great Britain by Section 2 of the Pharmacy Act, 1868, as modified by Section 1 of the Poisons and Pharmacy Act, 1908, the said council does hereby resolve and declare as follows:—That diethyl-barbituric acid ought to be deemed a poison within the meaning of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, and ought to be deemed a poison in the second part of the Schedule of Poisons to that Act.

This resolution has been sent to the Privy Council for approval. Diethyl-barbituric acid is known under various trade names, the best known being veronal. In March last year the council of the Pharmaceutical Society recommended, in another form of words, the addition of diethyl-barbituric acid to the list of poisons, but this recommendation was not adopted; the new resolution was framed with the object of divesting the former resolution of points of controversy which it contained.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,764 persons, 9082 births and 5896 deaths were registered during the week ended Saturday, Feb. 8th. The annual rate of mortality in these towns, which had steadily increased from 15·4 to 17·3 per 1000 in the four preceding weeks, declined to 17·2 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 16·5, against a corresponding rate of 17·0 per 1000 recorded in London. The death-rates last week in the several towns ranged from 4·2 in Ilford, 8·6 in Gillingham, 9·8 in Wolverhampton, 10·0 in Ealing, 10·2 in East Ham, and 10·3 in Walthamstow to 24·7 in Wigan, 24·9 in Wakefield, 26·0 in South Shields, 26·4 in Bury, 30·9 in St. Helens, and 41·9 in Stockton-on-Tees.

The 5896 deaths from all causes in the 96 towns were 10 fewer than the number in the previous week, and included 445 which were referred to the principal epidemic diseases, against numbers declining from 526 to 430 in the three preceding weeks. Of these 445 deaths, 200 resulted from measles, 78 from whooping-cough, 75 from infantile diarrhœal diseases, 45 from diphtheria, 29 from scarlet fever, and 18 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3, against 1·5 and 1·3 per 1000 in the two previous weeks. The deaths attributed to measles, which had been 277, 275, and 205 in the three preceding weeks, further declined to 200 last week, and caused the highest annual death-rates of 2·3 in Edmonton and in Sheffield, 2·4 in West Hartlepool, 2·8 in South Shields, 3·4 in Wigan, 3·8 in West Bromwich, 4·0 in Stockton-on-Tees, 4·2 in Acton, 5·2 in St. Helens, and 5·7 in Eastbourne. The deaths referred to whooping-cough, which had been 61, 81, and 66 in the three preceding weeks, rose to 78 last week, and included 37 in London and its suburban districts, 8 in Liverpool, and 3 in Bristol. The fatal cases of diarrhœa and enteritis (among infants under 2 years of age), which had declined from 87 to 65 in the three preceding weeks, rose to 75 last week; 27 deaths were registered in London, 7 in Birmingham, 7 in Liverpool, and 3 each in Stoke-on-Trent, in Manchester, and in Middlesbrough. The deaths attributed to diphtheria, which had been 59, 47, and 62 in the three preceding weeks, declined to 45 last week, of which number 8 occurred in London, 5 in Birmingham, 3 in Coventry, and 3 in Manchester. The deaths referred to scarlet fever, which had fallen from 32 to 17 in the four preceding weeks, rose to 29 last week; 7 deaths were recorded in London, 5 in Birmingham, 3 in Rhondda, 2 in Liverpool, and 2 in Preston. The fatal cases of enteric fever, which had averaged 15 in five preceding weeks, were 18 last week, and included 4 in London, 3 in Preston, and 2 in Liverpool.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospitals, which had steadily declined from 2112 to 1738 in the six preceding weeks, had further fallen to 1735 on Saturday last; 209 new cases of this disease were admitted during the week, against 204, 215, and 209 in the three preceding weeks. These hospitals also contained on Saturday last 962 cases of diphtheria, 804 of measles, 307 of whooping-cough, and 39 of enteric fever, but not one of small-pox. The 1499 deaths from all causes in London were 111 fewer than the number in the previous week, and were equal to an annual death-rate of 17·3 per 1000. The deaths referred to diseases of the respiratory system, which had steadily increased from 285 to 447 in the seven preceding weeks, declined to 373 last week, and were 172

below the number recorded in the corresponding week of last year.

Of the 5896 deaths from all causes in the 96 towns last week, 183 resulted from various forms of violence and 426 were the subject of coroners' inquests. The causes of 52, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death last week were duly certified in Manchester, Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, Nottingham, Salford, and in 64 other smaller towns. The 52 uncertified causes of death included 7 in Liverpool, 5 in Stoke-on-Trent, 5 in Birmingham, 5 in Sheffield, and 3 in Barrow-in-Furness.

### HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,260,200 persons at the middle of this year, 1165 births and 900 deaths were registered during the week ended Saturday, Feb. 8th. The annual rate of mortality in these towns, which had increased from 17·3 to 20·2 in the four preceding weeks, rose to 20·8 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 19·1, against a corresponding rate of 16·5 per 1000 in the 96 large English towns. Among the several Scotch towns the death-rates last week ranged from 10·5 in Kilmarnock, 11·7 in Kirkcaldy, and 14·6 in Clydebank, to 24·9 in Falkirk, 25·3 in Perth, and 29·0 in Ayr.

The 900 deaths from all causes were 26 in excess of the number in the previous week, and included 88 which were referred to the principal epidemic diseases, against 80 and 74 in the two preceding weeks. Of these 88 deaths, 52 resulted from whooping-cough, 12 from diphtheria, 10 from infantile diarrhœal diseases, 5 from measles, 5 from scarlet fever, and 4 from enteric fever, but not one from small-pox. These 88 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·0, against 1·3 per 1000 in the 96 large English towns. The deaths attributed to whooping-cough, which had steadily increased from 29 to 55 in the five preceding weeks, were 52 last week, and included 34 in Glasgow, 7 in Edinburgh, 4 in Leith, 2 in Aberdeen, and 2 in Motherwell. The deaths referred to diphtheria, which had been 10, 13, and 6 in the three preceding weeks, rose to 12 last week, 4 deaths were registered in Aberdeen and 3 in Glasgow. The fatal cases of diarrhœa and enteritis (among infants under two years of age), which had been 10, 20, and 5 in the three preceding weeks, rose to 10 last week, 4 of which occurred in Glasgow. The 5 deaths from measles, 3 of which were recorded in Glasgow, were slightly in excess of the average in recent weeks. The 5 deaths referred to scarlet fever were equal to the average in the five preceding weeks, and comprised 3 in Glasgow and 2 in Coatbridge. Of the 4 fatal cases of enteric fever, 2 occurred in Glasgow, 1 in Aberdeen, and 1 in Greenock.

The deaths referred to diseases of the respiratory system in the 16 Scotch towns, which had steadily risen from 148 to 221 in the four preceding weeks, declined to 214 in the week under notice; 34 deaths were attributed to different forms of violence, against 27 and 31 in the two preceding weeks.

### HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,199,180 persons at the middle of this year, 654 births and 481 deaths were registered during the week ended Saturday, Feb. 8th. The annual rate of mortality in these towns, which had declined from 22·2 to 20·4 per 1000 in the three preceding weeks, increased to 20·9 per 1000 in the week under notice. During the first six weeks of the current quarter the mean annual death-rate in these Irish towns averaged 21·3 per 1000; in the 96 large English towns the corresponding death-rate did not exceed 16·5, while in the 16 Scotch towns it was equal to 19·1 per 1000. The annual death-rate recorded in the several towns last week was equal to 17·7 in Dublin (against 17·3 in London and 22·2 in Glasgow), 23·2 in Belfast, 22·4 in Cork, 20·3 in Londonderry, 16·2 in Limerick, and 26·6 in Waterford, while in the remaining 21 smaller towns the mean rate was 22·4 per 1000.

The 481 deaths from all causes in the 27 Irish towns were 11 in excess of the number in the previous week, and included 41 which were referred to the principal epidemic diseases, against numbers steadily declining from 53 to 30 in the four preceding weeks. Of these 41 deaths, 18 resulted from measles, 9 from infantile diarrhœal diseases, 5 from diphtheria, 4 from whooping-cough, 2 from scarlet fever, 2 from enteric fever, and 1 from typhus, but not one from small-pox. These 41 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·8 per 1000; the death-rate from these diseases in the 96 large English towns last week did not exceed 1·3, while in the 16 Scotch towns it was equal to 2·0 per 1000. The deaths attributed to measles, which had been 22, 17, and 21 in the three preceding weeks, fell to 18 last week, and included 14 in Belfast and 2 in Newry. The deaths of infants (under 2 years of age) referred to diarrhœa and enteritis, which had declined from 12 to 5 in the four preceding weeks, rose to 9 last week; 5 deaths occurred in Belfast and 2 in Dublin. The 5 fatal cases of diphtheria recorded last week were equal to the average in the five preceding weeks, and comprised 4 in Belfast and 1 in Dublin. The 4 deaths attributed to whooping-cough last week, of which 2 were registered in Dublin, were slightly in excess of recent weekly numbers. The 2 deaths referred to scarlet fever were recorded in Dublin and Wexford respectively; those to enteric fever in Dublin and Newry; and the fatal case of typhus in Galway.

The deaths referred to diseases of the respiratory system, which had been 113, 135, and 120 in the three preceding weeks, declined to 104 in the week under notice. Of the 481 deaths from all causes, 164, or 34 per cent., occurred in public institutions, and 16 resulted from different forms of violence. The causes of 12, or 2·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Fleet-Surgeon: H. Spicer to the *Cornwallis*. Staff-Surgeons: S. Roach to the *Devonshire*, and N. B. V. Jacob to the *Roxburgh*, both on completing. Surgeons: G. A. S. Hamilton to the *Devonshire*, on completing, and A. Fairley to the *Victory*, for Royal Naval Barracks.

Fleet-Surgeon A. S. Gordon Bell has been placed on the retired list at his own request (dated Feb. 1st, 1913).

### ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants to be Captains (dated Jan. 31st, 1913): Gilbert H. Dive, Lionel C. Hayes, Robert Gale, Alfred G. Jones, Kenneth Comyn, Frederick R. Laing, Arthur S. Cane, John M. Weddell, Charles M. Nicol, Arthur P. O'Connor, Thomas H. Dickson, Hugh G. Robertson, Herbert V. Stanley, Philip C. Field, Ronald M. Davies, Richard C. G. Kinkead, Edward C. Stoney, Theodore W. Stallybrass, and Victor P. Hutchinson.

The undermentioned Lieutenants are confirmed in their rank: William B. Laird, Frances R. B. Skrimshire, Edward B. Allnutt, Harry C. Todd, Maurice Burnett, Gilbert A. Blake, Robert W. Vint, Harold W. L. Allott, John Hare, Robert A. Flood, Eric C. Lang, Leopold T. Poole, Thomas H. Balfour, Reginald E. Porter, Hugh J. S. Shields, Pierce M. J. Power, Edward V. Whitby, Edmund U. Russell, Norman W. Stevens, Richard B. Phillipps, James C. Sproule, George F. Allison, Robert C. Carlyle, John E. Hepper, and Henry F. Panton.

Colonel C. E. Faunce has been selected for appointment as Assistant Director of Medical Services to the Woolwich District, in succession to Colonel R. W. Ford, D.S.O.

Brevet-Colonel C. H. Melville, commanding the Military Hospital at Lucknow Cantonment, has been selected for the higher rate of pay under Article 317 of the Royal Warrant for Promotion.

Lieutenant-Colonel S. Macdonald has been transferred from medical recruiting duties in the London District to the Southern Command. Lieutenant-Colonel H. P. G. Elkington has been selected for appointment to hold charge of the Military Hospital at Shorncliffe. Lieutenant-Colonel J. J. Gerrard has taken up duty as Senior Medical Officer in the

Sierra Leone Protectorate, West Africa, in succession to Lieutenant-Colonel A. A. Sutton, D.S.O. Lieutenant-Colonel A. R. Aldridge, C.S.I., has been selected for appointment as Officer in charge of the Medical Division at the Royal Herbert Hospital, Woolwich.

Major B. R. Dennis has arrived home for duty from the Straits Settlements, tour expired. Major W. L. Bennett has been appointed to the Northern Command. Major A. H. McN. Mitchell has been transferred from the Southern Command to the Eastern Command. Major M. P. Corkery has taken up duty in the Irish Command on return home from Nasirabad, tour expired. Major H. G. F. Stallard, in charge of the Military and Cantonment Hospitals at Cherat, has taken up duty at Peshawar Cantonment on transfer. Major A. H. O. Young has embarked for a tour of service in India. Major S. G. Butler has been selected for appointment as Specialist in Operative Surgery to the Military Hospital at the Curragh Camp. Major A. D. Waring has arrived home on duty from Hong-Kong, tour expired. Major E. B. Steel has been appointed to the London District. Major W. H. S. Nickerson, V.C., deputy assistant director of medical services, sanitary branch, to the Second (Rawal Pindi) Division, has taken up duty at Rawal Pindi Cantonment on transfer from Murree Cantonment. Major J. G. Gill has taken up duty at the Military Hospital, Maymyo, Upper Burma, on transfer from Bangalore. Major H. Simson, specialist in advanced operative surgery to the Sixth (Poona) Division of the Southern Army, has arrived home on leave of absence from India. On return from South Africa, tour expired, Major E. Brodribb has embarked for duty on board the transport s.s. *Soudan* for the voyage to South Africa and back. Major A. M. MacLaughlin has taken up duty in the Ninth (Secunderabad) Division of the Southern Army in India. Major E. W. Sibberry has left Potchefstroom, South Africa, for duty at home. Major E. W. Slayter has taken over charge of the Military Hospital at Mount Abu. Major C. J. O'Gorman has been transferred from the Military Hospital at Peshawar Cantonment to the Station Hospital, Fort William, Calcutta. Major H. S. Thurston has been appointed to hold charge of the Military Hospital at Valletta, Malta. Major E. A. Bourke has arrived home on duty from South Africa.

Captain B. H. V. Dunbar has been selected for attachment as Instructor to the Officers Training Corps, Belfast University Contingent. Captain A. S. Williams has arrived home for duty from India, tour expired. Captain H. W. Leng has been appointed to the Southern Command at the expiration of six months' leave of absence home from West Africa. Captain W. D. C. Kelly has embarked for a tour of service in the South African Command. Captain J. P. Lynch has been transferred from Shorncliffe to the Military Hospital at Canterbury. Captain C. G. Browne has taken up duty at the Royal Victoria Hospital, Netley. Captain W. Mitchell, from the Military Hospital, Subathu, and Captain H. W. Carson, Staff-Surgeon at Cherat, have been detailed for duty on board the transport s.s. *Hardinge*, which left Bombay for Southampton on Feb. 5th with time-expired and invalid soldiers from India. Captain P. Samson has taken up duty in the Irish Command. A transfer on the roster for service abroad between Captain D. G. Carmichael and Captain R. H. Nolan has been approved. Captain G. E. Cathcart has embarked for a tour of service in India. Captain H. E. Priestley has been transferred from the medical charge of Parkhouse Camp, Salisbury Plain, to Tidworth for duty at the Military Hospital. Captain A. C. Elliott has arrived home on leave of absence from the Military Hospital at Rawal Pindi Cantonment.

Lieutenant L. F. K. Way has joined the Military Hospital at Bloemfontein for duty. Lieutenant E. C. Deane has been transferred from Ross Camp to Seaforth. Lieutenant D. W. Bruce has taken up duty at the Section Hospital at Ewshott on transfer from Aldershot. Lieutenant E. G. S. Cane has embarked for a tour of service in India. Lieutenant H. W. L. Allott has been appointed to the Dublin District for duty. Lieutenant H. S. Blackmore has been transferred from the Military Hospital at the Guards' Depôt, Caterham, to the London District.

### INDIAN MEDICAL SERVICE.

The King has approved of the retirement of Major Herbert Joseph Richard Twigg (dated Jan. 13th, 1913).

Colonel D. V. J. D. Grant has taken up duty at Headquarters of the Karachi Brigade as Assistant Director of Medical Services, in succession to Colonel R. B. Roe, transferred to Ambala Cantonment as Assistant Director of Medical Services to the Sirhind and Jullundur Brigades.

Lieutenant-Colonel K. Prasad has been granted an extension of leave of absence home from India for six months on medical certificate. Lieutenant-Colonel R. H. Castor, civil surgeon at Myingyan, has been granted six months' leave of absence, combined with furlough, home from India.

Major A. Hooton has been selected for appointment at Bombay as a Civil Surgeon of the First Class, in succession to Lieutenant-Colonel B. B. Grayfoot, transferred for permanent duty under the Government of India. Major E. J. Morgan has been appointed to Sitapur in relief of Captain H. C. Buckley, who has been officiating as civil surgeon. Major W. V. Coppinger, officiating professor of ophthalmic surgery at the Medical College, Calcutta, and ophthalmic surgeon to the College Hospital, has been appointed to officiate as Second Resident Surgeon during the absence on leave of Captain A. D. White. Major J. C. H. Leicester, civil surgeon of the second class, has been selected for appointment as Officiating Civil Surgeon at Purnea, in succession to Captain N. W. Mackworth. Major F. H. G. Hutchinson has arrived home on leave of absence from India.

Captain D. Munro has been selected for appointment as First Resident Surgeon, *sub pro tempore*, at the Presidency General Hospital, Calcutta. Captain H. Ross, chief plague officer in the United Provinces of Agra and Oudh, has been granted three months' privilege leave of absence, combined with nine months' study leave and 12 months' furlough, home from India. Captain W. F. Brayne, Special Plague Medical Officer, Pegu Division, has been granted one month's privilege leave of absence. Captain A. S. Leslie has taken up duty in the Civil Medical Department of Madras Presidency. Captain H. R. Dutton has relinquished charge of the duties of Superintendent of the Midnapore Central Jail on relief by Major E. R. Parry. The services of Captain W. T. Finlayson have been permanently placed at the disposal of the Government of the Punjab for employment in the Jail Department. Captain J. Taylor has arrived home on leave of absence from India. Captain J. H. Horton, D.S.O., has been granted an extension of his leave of absence home from India up to June 21st next by the Secretary of State. Captain R. H. Bott has taken up duty at Lahore as Professor of Anatomy at the Government Medical College, relieving Captain H. H. Broome. Captain S. C. Pal has relinquished charge of the Fatehgarh District as civil surgeon. Captain E. T. Harris has been selected for appointment as Civil Surgeon at Toungoo on transfer from Mogok under the orders of the Government of Burma, Civil Medical Department. Captain A. McD. Dick has been selected by H.E. the Commander-in-Chief in India for appointment as Specialist in Advanced Operative Surgery to the Burma Division. Captain F. P. Wernicke, officiating civil surgeon at Hoshangabad, has been appointed in medical charge of the Narsinghpur District. The services of Captain W. J. Powell, officiating superintendent of the Central Jail at Jubbulpore, have been replaced at the disposal of the Government of India in the Home Department.

### SPECIAL RESERVE OF OFFICERS.

*Royal Army Medical Corps.*

Travis Hampson to be Lieutenant (on probation) (dated Jan. 14th, 1913).

### TERRITORIAL FORCE.

*Royal Army Medical Corps.*

3rd South Midland Field Ambulance, Royal Army Medical Corps: Captain Percy Moxey, from the list of officers attached to Units other than Medical Units, to be Captain (dated Feb. 1st, 1913).

3rd East Anglian Field Ambulance, Royal Army Medical Corps: William Reginald Margetts Turtle to be Lieutenant (to be supernumerary) (dated Jan. 13th, 1913).

1st Home Counties Field Ambulance, Royal Army Medical Corps: Captain Arthur T. Falwasser resigns his commission (dated Feb. 8th, 1913).

3rd East Lancashire Field Ambulance, Royal Army Medical Corps: Lieutenant Wilson H. P. Hey to be Captain (dated Dec. 12th, 1912).

3rd Northumbrian Field Ambulance, Royal Army Medical Corps: Captain Wilson Ranson, Royal Army Medical Corps, Special Reserve, to be Lieutenant-Colonel (dated Feb. 8th, 1913).

1st Northern General Hospital, Royal Army Medical Corps: Captain Frederick Charles Pybus, from the List of Officers whose services will be available on mobilisation, to be Captain in the permanent *personnel* (dated Feb. 8th, 1913). Captain Frederick C. Pybus to be Major (dated Feb. 8th, 1913).

5th London Field Ambulance, Royal Army Medical Corps: Lieutenant Sidney F. St. J. Steadman to be Captain (dated August 19th, 1912).

4th London General Hospital, Royal Army Medical Corps: Ernest Rock Carling to be Captain, whose services will be available on mobilisation (dated Jan. 31st, 1913).

*Attached to Units other than Medical Units.*—The undermentioned Lieutenants to be Captains: Thomas Brown (dated Oct. 3rd, 1912) and Albert A. Gunn (dated Dec. 16th, 1912). Lieutenant Edward C. Ryall resigns his commission (dated Feb. 8th, 1913).

*For attachment to Units other than Medical Units.*—George Henry Watson to be Lieutenant (dated Jan. 6th, 1913). Thomas William Selwyn Hills to be Lieutenant (dated Jan. 24th, 1913).

### TRANSACTIONS OF THE UNITED SERVICES MEDICAL SOCIETY.

The present issue covers the proceedings of the society from October to December, 1912, and contains the Presidential address by Fleet-Surgeon P. W. Bassett-Smith, C.B., R.N. This address, after referring to the progress which the society has made during the six years of its existence, gives an interesting account of the evolution and growth of the Naval Medical Service, recalling the fact that as far back as the reign of Henry VIII. medical men formed part of His Majesty's service. Up to the year 1704 surgeons in the navy were rated with common men, but in that year they were given a warrant ranking them with pilots, boatswains, gunners, and carpenters. In 1808 surgeons attained ward-room rank when the frock coat and tall hat were discarded for a uniform. In 1827 the first medical instruction at Haslar was given to naval surgeons. Among the distinguished men of the service were Sir James Lind, senior physician of Haslar Hospital, Sir Gilbert Blane, and Sir William Burnett, who became Director-General of the Naval Medical Service, and with Dr. Scott founded the museum at Haslar. Under Sir William Packington in 1858, surgeons were given better cabins and improved mess accommodation. Among other papers printed in these transactions are Medical Problems of a Territorial Force, by Captain C. B. Sylvester Bradley, R.A.M.C., and The Crux of the Medical Problem in War, by Colonel Bruce M. Skinner, M.V.O., A.M.S.

### BULLETIN OF THE NAVAL MEDICAL ASSOCIATION OF JAPAN.

The November number of this Bulletin, which is published by the Naval Medical Association at the Navy Department at Tokyo, Japan, contains several papers by Japanese naval officers, and although the book is printed in the Japanese character, a short summary of the contents is given in English. Among the papers is one on Koch's albumose-free tuberculin, by Staff-Surgeon S. Miyao, the author arriving at the conclusions, among others, that the remedy has a marked favourable effect on pulmonary tuberculosis, sometimes even in its third stage with signs of cavity, and that the effect of the remedy should be more marked if used for cases of the disease in their initial stage in combination with other treatment. The list of contributors includes Fleet-Surgeon K. Sukzuki, Fleet-Surgeon H. Yamamoto, Staff-Surgeon T. Tanaka, Surgeon M. Hashimoto, and Surgeon N. Kusano.

---

THE death is announced at the age of 62 of the eminent professor of anthropology in the University of Heidelberg, Dr. O. Schoetensack, whose name is associated with the discovery of the fossil lower jaw of the skeleton of the so-called Heidelberg man, supposed by some to be a million years old. Dr. Schoetensack was for many years an analytical chemist, and only took up anthropology when he became middle-aged.

# Correspondence.

"Audi alteram partem."

## PHLEBITIS AND THROMBOSIS.[1]

*To the Editor of* THE LANCET.

SIR,—It is certain that the pathogeny of blood-clotting during life cannot be fully disclosed by clinical observation alone. Research in the pathological laboratory must be added to complete the study. We have travelled far since Sir John Simon described coagulation as "the *rigor mortis* of the blood," but not yet perhaps is this somewhat mysterious process fully disclosed to us.

Physiologists tell us that the presence of three colloids are essential to it—two furnished by the liver and one by the leucocytes of the blood. By mutual precipitation these three unite to form fibrin. In addition, calcium must be present. Appreciation of the details of such a process is not possible for us at the bedside of a patient, but we have learned that the presence of typhoid bacilli and of pneumococci hastens coagulation, while streptococci and staphylococci delay it.

Clinically, we recognise trauma as a determinant in many cases, especially in cases of arthritism with a gouty predisposition. Anæmia, as in chlorosis, and as the outcome of the cachexia of wasting diseases, is another determining cause. Coagulation in aneurysmal sacs is one more proof that this process is not confined to blood withdrawn from the body. Normally, the blood tends to preserve its fluidity, but in the opposite conditions of plethora and marasmus, with more or less stasis, there is a tendency to coagulation. Clinically, the term hyperinosis has been applied to a condition of blood indicated by viscosity and tendency to coagulate. We are probably not wrong in believing that super-fibrination is a result of disordered function, or the effect of some variety of disease. It has long been held that this condition prevails in all inflammatory states—hence the significance attached by the old physicians to the "buffed and cupped" characters of the blood when withdrawn by venesection for the relief of such disorders.

We now recognise at least three determinants for the occurrence of thrombosis: (*a*) a feeble state of the circulation, due to cardiac debility; (*b*) injury to, or alteration of, the *intima* of vessels (doctrine of Cruveilhier); and (*c*) direct blocking of their lumen by the intrusion of foreign or toxic material. In cases of cancerous disease there may be a local origin from direct intrusion of new growth into a vessel, but this will not explain the occurrence of thrombosis in a femoral vein as much as six months before the obvious onset of cancer of the stomach. Such cases were noted by the illustrious Trousseau, and, strangely enough, he was the victim of such an occurrence himself, and at once foretold the sequel of it. The disorder first recognised by Paget as gouty phlebitis is one which may fairly be attributed to some conditions of the blood which prevail at the onset of regular attacks of gout. Viscosity is probably one of these. The attack may not alight on any joint, but the *materia peccans* is determined to the *intima* of one or more veins, with a tendency to spread to larger ones (abarticular gout). In some of these cases there is a traumatic factor which determines the point of selection; this induces phlebitis with thrombosis. We know that a diet rich in proteids tends to produce an excess of purin bodies and to promote viscosity of the blood. It is found that the blood of rabbits fed on bran and cereals tends to coagulate rapidly, while a diet of green vegetables promptly removes this tendency.[2] Potable waters containing much lime and milk are known to produce hyperinosis. Carbonic acid, ether, and chloral hydrate increase the viscosity of the blood.

The condition of the blood in the pregnant woman has a tendency to hyperinosis apart from any septic infection, and this is almost certainly increased after parturition, with a special tendency to coagulate readily. Hence the liability to phlegmasia, and the possibility of a travelling thrombus, which may cause rapid death by

[1] Sir Dyce Duckworth's valuable letter puts forward the views which he expressed in a contribution (read in French) at the Thirteenth Congrès Français de Médecine, Paris, October, 1912.—ED. L.

[2] Lauder Brunton.

embolism of the pulmonary artery, even in cases conducted with aseptic methods. This fact should lead to precaution as to the dietary of pregnant women, especially in the upper classes, who are sometimes over-nourished.

The tendency to viscosity of the blood is to be met by diminished use of animal food and increased use of fresh, especially green, vegetable food. Where the circulation is languid alcohol in some form is of much value. Milk should be sparingly used and diluted with sodium citrate and soft water. The use of ether as an anæsthetic may perhaps prove unadvisable in cases where a hyperinotic condition of the blood is suspected.—I am, Sir, yours faithfully,

Grosvenor-place, S.W., Feb. 10th, 1913. DYCE DUCKWORTH.

## RESEARCHES IN COLOUR VISION.

*To the Editor of* THE LANCET.

SIR,—I have just been reading a book with the above title by Sir W. Abney with the greatest gratification. When a scientific man has striven for the greater part of his life, against the greatest opposition, to establish certain new principles, facts, and methods, it is very pleasing to find that a man who has been his chief opponent should, though rather late in the day, have adopted those methods.

For 24 years I have advocated certain methods of testing for colour-blindness based on my own theory of colour vision. I have insisted, in opposition to Sir W. Abney, that colour names were essential in any test, and that coloured lights should be used instead of coloured wools. The first test mentioned is the Holmgren wool test; to this two new test skeins have been added similar to those in my classification test. Sir. W. Abney writes: "If the examinee is asked to name some of the confusion colours, the giving of a wrong name to any of them will confirm what has probably been found out by the matches." The word "probably" is very significant. The next test mentioned is one by water-colour washes, in which squares of pale colours are named (see p. 105 of my book, "Colour Blindness and Colour Perception," International Scientific Series, 1891 and 1909). Sir W. Abney gives laboratory tests in which the examinee is asked to name portions of the spectrum in a similar manner to that described in my book, p. 111. The imperfect lantern test recommended by the Departmental Committee of the Board of Trade is described. This would have been a better copy of my lantern and more efficient if means for regulating the luminosity had been adopted. A test by simultaneous contrast is next mentioned. I was the first to point out that simultaneous contrast is more marked for the colour-blind than the normal-sighted (see my book, p. 270). My only regret is that Sir W. Abney has given two other methods—namely, matching yellow with a mixture of red and green and estimating the relative luminosities of red and green by means of the flicker method of photometry. Both of these are based on the trichromatic theory, and I have shown both to be erroneous, but only within the last few weeks; that is to say, a man who is so colour-blind as to confuse full red and full green may appear absolutely normal-sighted by these methods, whilst a normal-sighted person may appear colour-blind.

As Sir W. Abney states that his book is the substance of a large number of communications to the Royal Society, and I am unable to find the methods described by him in them with the exception of the two which I regard as erroneous, I think I may draw attention to one slight omission in that he has not mentioned my name throughout the book. I am, Sir, yours faithfully,

F. W. EDRIDGE-GREEN.

The Institute of Physiology, University College, London, Feb. 7th, 1913.

## THE PATHOGENICITY AND VIRULENCE OF BACTERIA.

*To the Editor of* THE LANCET.

SIR,—In THE LANCET of Feb. 8th, p. 413, it is stated by Dr. F. H. Thiele and Dr. Dennis Embleton that, anticipating our criticism, they took full precautions to guard themselves against error in their recently published experiments. A year ago we published charts which showed that the use of water collected from either the condensing drip or the collecting tank of the ordinary distilling apparatus leads to serious error in the study of experimental fever. This is due to the infection of both worm and tank that frequently occurs in consequence of the aspiration of infected air caused by cooling. We also showed that the use of filtered water introduces a further source of error owing to contamination of the filtrate with calcium and other salts if hardware filters are employed. Dr. Thiele and Dr. Embleton admit the use of the hardware filter and of water from the condensing drip in all their experiments, and it is therefore difficult to understand in what sense their precautions against error were complete. If, however, they will collect into sterile agar tubes 1 or 2 c.cm. of water direct from the condensing drips of a series of the distilling vessels in ordinary laboratory use, they will be able to see for themselves the percentage of tubes in which gross infection will have taken place. And if, further, they will add ammonium oxalate to water after passage through the Pasteur-Chamberland filter—which they apparently believe to be innocent of calcium—they will be able to confirm our observation that it contains calcium in considerable amount. After repetition of these two experiments they will, we feel sure, be the first to admit the accuracy of the demonstration we gave last March that water after filtration through hardware filters is no longer pure water, and that even unfiltered water when it fails to produce a fall of temperature when injected is also not pure water. As regards the use of the guinea-pig as a suitable animal in which to study experimental fever by repeated observation, the point of our remarks on the subject was that very inconstant temperatures had been found sometimes to occur in uninjected animals in spite of the fact that they had been kept for weeks on a constant and adequate food-supply. In view of this fact, study of an equally large number of animals will convince the most sceptical observer that this—the third source of error to which we referred—is one that cannot be ignored. We are, Sir, yours faithfully,

E. C. HORT.

The Lister Institute, Feb. 8th, 1913. W. J. PENFOLD.

## AN INTERESTING EXHIBITION OF RAYNAUD'S PHENOMENA.

*To the Editor of* THE LANCET.

SIR,—The interesting article by Professor T. Wingate Todd in THE LANCET of August 10th, 1912, on The Vascular Symptoms in "Cervical" Rib, suggests that the following curious case may be of interest.

A B, a strong, healthy man, first came under observation in May, 1911. He is 45 years of age and married, a teetotaler, and has three healthy children, youngest 8 years; no history of syphilis, and has never had any illness. His occupation causes him to do a good deal of hammering with a heavy hammer. Complained first of "pins and needles" pains in the ulnar side of his right hand and of two inner fingers, severe enough to keep him awake at night. Liniments and the faradic current gave no relief. A small swelling about the centre of the ulnar side of the right forearm was explored for a foreign body, but nothing was found. The tingling pain soon spread to the radial side of the hand, and was accompanied by swelling and weakness of grasp. The reflexes, wrist and elbow jerk, were normal; cutaneous sensation to touch, pain, and temperature was diminished. Three months from the commencement of the attack the hand exhibited the milder phenomena characterising Raynaud's disease—viz., local syncope, especially after elevation and immersion in cold water, and local asphyxia after hanging the hand down. About this time a small swelling became manifest near the proximal end of the extensor secundi internodii pollicis tendon. This also was explored and nothing found. The patient was told to wear a thick glove and to avoid cold water. Owing to the severity of the pain small doses of anodynes were necessary to procure sleep. About this time it was noticed that the right subclavian pulse was very much more difficult to feel than on the left side, the brachial pulse was very feeble, and the radial and ulnar arteries imperceptible. Faradism having quite failed to give relief, early in 1912 galvanism was tried, with the approbation of Dr. W. Mitchell Stevens, of Cardiff, who took great interest in the case. The patient began with eight cells of a constant current battery of 24 dry cells, going on to 16 and using the method originally

recommended by Raynaud and practised by Sir Thomas Barlow—that is, one electrode over the cervical spine, and the other in a basin of warm water in which the hand was immersed. The patient, being desirous of saving his hand, persevered with this treatment, although many small burns occurred on the skin of the nape and upper arm from the strength of the current employed. The vaso-motor disturbances and the pain gradually lessened. The grip strengthened, and the patient returned to duty in July, 1912, doing light work at first, and has now resumed his full work. Dr. Stevens stated that the maximum blood pressure was 130 mm. No tumour could be felt anywhere in the course of the arterial trunk of the affected limb. Embolism appears out of the question, as his heart is perfectly healthy, and the symptoms commenced in the ulnar nerve. Thrombosis also seems out of court on the same grounds; and the fact of recovery after the use of galvanism points to the phenomena being due to implication of the branch of the cervical sympathetic chain which controls the vascular supply of the upper limb.

After reading Professor Wingate Todd's interesting cases, we naturally expected to find the shadow of a cervical rib in this case, but no trace of such a shadow was found. Possibly in the cervical rib cases the rib is merely a predisposing cause, and some slight injury to the root of the neck is the exciting cause of the pseudo-Raynaud symptoms. Obviously the abnormal rib has been present from birth, whereas the symptoms, instead of being congenital, appear in active adult manhood, when traumatism is likely to occur.

I am, Sir, yours faithfully,

EDWARD C. B. IBOTSON.

Briton Ferry, Glamorgan, Feb. 8th, 1913.

## ARTIFICIAL RESPIRATION.

*To the Editor of* THE LANCET.

SIR,—One strongly deprecates the habit nowadays of going outside one's province. This is an example, when an attempt is made to explain in the physical plane what has evidently taken place in the spiritual plane. However, whatever has been paraphrased loosely from the received Hebrew text is due to unskilfulness and arbitrariness. The powers, too, of the translators were limited. The word in the Septuagint which is translated as child in the English version is παιδάριον. This is a diminutive from παῖς, and means a young or little boy. We may take it that the person was a child and not an adult. In the same passage the same term παιδάριον is used of the servant, and in classical Greek it means a young slave. The Verse 34 which has been quoted in your issue of Feb. 1st is part of a paragraph. The paragraph commences at Verse 18 as follows: "18. ¶And when the child was grown, it fell on a day, that he went out to his father to the reapers. 19. And he said unto his father, My head, my head! And he said to a lad, Carry him to his mother. 20. And when he had taken him, and brought him to his mother, he sat on her knees till noon, and then died." From this last Verse 20 some considerable period has elapsed before we come to the remarkable Verse 34, in which the child seems to have been revived by what Professor Leonard Hill would style "Elisha's method of artificial respiration." It might interest a few to fathom the nature of the child's malady from the surgical or medical point of view if we venture so boldly as to go outside our definite range. I am, Sir, yours faithfully,

Alton, Hants, Feb. 8th, 1913. JOHN FREDK. BRISCOE.

*To the Editor of* THE LANCET.

SIR,—Since you published my letter in THE LANCET of Feb. 8th in reply to Dr. Leonard Hill I have discovered the following passage with reference to the matter in "The Diseases of the Bible," by Sir Risdon Bennett, M.D., F.R.S., Ex-President of the Royal College of Physicians (The Religious Tract Society, London, 1887):—

*Disease of the Shunammite Woman's Son.*—"And when the child was grown, it fell on a day, that he went out to his father to the reapers. And he said unto his father, My head, my head. And he said to a lad, Carry him to his mother. And when he had taken him, and brought him to his mother, he sat on her knees till noon, and then died. And she went up, and laid him on the bed of the man of God, and shut the door upon him, and went out." This case has usually been considered as one of sunstroke or insolation, and this is probably the correct view. But if the child's exclamation, "My head, my head," is to be understood as intimating sudden severe pain of the head, it is possible that it may have been an instance of sudden *meningitis* (inflammation of the membranes of the brain) supervening in a delicate child. There are several varieties of sunstroke, all of them endangering life, though many cases recover. In the severer form, or sunstroke proper, the brain and nerve-centres are overwhelmed, the respiration and circulation are arrested, and death may ensue rapidly. The patient becomes unconscious, the pulse fails, and the skin is cold. Such cases, if not immediately fatal, often prove so in the course of a few hours. If eventually they recover, it is after a period of reaction accompanied by symptoms of severe injury to the nervous system. That death had actually occurred in this instance there can be no reasonable doubt. A period of ten or twelve hours at least must have elapsed before the arrival of the prophet. And it was not till after having kept the child on her knee till noon, and then seeing that he was dead, that the mother hastened to fetch Elisha. During her absence the child was laid on the bed of the prophet, and the door shut upon him; no remedies therefore were used, nor any attention given to the child. Gehazi, who arrived first at the house, on laying the prophet's staff on the face of the child, found there was "neither voice nor hearing." "And when Elisha was come into the house, behold, the child was dead, and laid upon his bed." The body was then cold, and it was not till after Elisha's prayer and stretching himself on the child, that "the flesh of the child waxed warm," and that subsequently he opened his eyes, after sneezing seven times. There are here no natural means, the use of which could explain the recovery.

I am, Sir, yours faithfully,

Feb. 10th, 1913. SEARCHER.

## SERUM TREATMENT IN MELÆNA NEONATORUM.

*To the Editor of* THE LANCET.

SIR,—A reference is made in the Annotations in THE LANCET of Feb. 8th, p. 403, to serum treatment in cases of melæna neonatorum by Dr. Franz. Bearing on this subject, I referred to this method of treatment in some detail in a thesis which is reprinted in the last volume of the Guy's Hospital Reports (Vol. LXVI., p. 328). It is here shown that Welch and Nicholson, of Philadelphia, have had equally successful results in the treatment of these cases with normal human blood serum.

I am, Sir, yours faithfully,

Lowestoft, Feb. 10th, 1913. WILSON TYSON, M.D. Cantab.

## THERAPEUTIC USE OF VACCINES IN TYPHOID FEVER.

*To the Editor of* THE LANCET.

SIR,—In THE LANCET for Jan. 18th, p. 184, under "Annotations," is a review of my paper in the *American Journal of the Medical Sciences* for October on the therapeutic use of vaccines in typhoid fever. I wish to thank you for the very careful, complete, and concise review you gave of this paper. There is one mistake, however, evidently a typographical error, to which I would like to call attention. In the twelfth line of the second column occurs this sentence: "He begins with 500 millions, and at intervals of *14* days, as long as necessary, gives a dose increased by 100 millions." The sentence should read: "He begins with 500 millions, and at intervals of *four* days, as long as necessary, gives a dose increased by 100 millions." I hope you will make this correction, as the difference is very important. Your review will be read by more people than will see the original paper.

I am, Sir, yours faithfully,

New York, Jan. 31st, 1913. J. G. CALLISON, M.D.

## THE ORDER OF ST. JOHN OF JERUSALEM.

*To the Editor of* THE LANCET.

SIR,—On the last day of January the hand of death removed from amongst us three really distinguished men: the Earl of Crawford, Admiral Sir F. G. D. Bedford, and Lord Ilkeston. The first was a scientist and a soldier, the second a naval administrator and a fighting sailor, the third a medical man and a politician. The two first named were Knights of Grace of the Order of St. John of Jerusalem in England; the last was not. The practice of conferring the decorations of this Order upon naval and military officers, members of the peerage, and gentlemen with influential friends at Court, to the exclusion of those who have actually done something towards the relief of suffering and sickness, has been prevalent for a long time; but it is quite time that a reform should be instituted. I am not unmindful of the fact that there are a few medical men

who have received promotion to the higher ranks of the Order; but they form an insignificant minority, and even they have been thus honoured for social or military rather than professional eminence in most cases. Admiral Bedford was a G.C.B. and a G.C.M.G.; his fame would have been no whit less glorious had he never become a Knight of the Order of St. John. The best of private reasons may have led to his reception of the honour. Lord Crawford was a Fellow of the Royal Society and a Knight of the Thistle, the two distinctions which marked him out clearly as prominent in science and distinguished in rank. He, too, might well have remained outside the higher ranks of the Order. Lord Ilkeston, on the other hand, throughout many years of his long professional career, not only was a very able and industrious hospital physician and teacher, but also rendered notable unremunerated services to the medical profession as a Direct Representative on the General Medical Council, to the public health of Birmingham, and afterwards to that of the United Kingdom when he became Parliamentary Secretary to the Local Government Board. For such services to the State no better recognition could well be devised than the bestowal of one of the two Knighthoods of St. John of Jerusalem. Universities delighted to honour him with their degrees, and public work obtained for him an hereditary dignity, but (I believe) that the Knighthood of Grace was not for him. When the purpose and origin of the Order of St. John is remembered, surely it is evident that something is amiss with its administration at the present day. His Majesty the King is Sovereign Head and Patron of the Order (in England), and was Grand Prior when he was Prince of Wales. He is credited with the intention of reforming the present system of the distribution of honours and titles, and I trust that he will not omit the Order of St. John from the scope of his reforms.

I know, Sir, that much that has been good in the Order has been chronicled in your columns, but I venture none the less to ask publicity for the remarks of,

Yours faithfully,

Feb. 2nd, 1913. DOUBTFUL.

## CHEWING-GUM.

*To the Editor of* THE LANCET.

SIR,—A case having occurred recently in the North of England in which death was suspected to have been caused, to some extent at least, by the use of chewing-gum, it appeared to me advisable to have samples of this article analysed. The following is the gist of the report received: "The samples are free from poisonous metals and actively harmful ingredients. They are compounded of a vegetable gum, known as chicle gum, which is allied in its nature to guttapercha, with sugar and flavouring essences. The gum present in these samples to the extent of 17 to 25 per cent. is not actively poisonous or harmful chemically, but is quite insoluble and indigestible. The use of these chewing-gums by children especially who are likely to swallow the whole is much to be deprecated, and should be discouraged by all available means."

Before taking any further steps, I feel that I should have some definite evidence to put forward. If, therefore, any reader of THE LANCET has had experience of actual cases in which harmful results accrued from the use of these substances, I should take it as a great favour if he would communicate the facts to me.

I am, Sir, yours faithfully,

H. KERR,
Medical Officer of Health.

Health Department, Town Hall, Newcastle-upon-Tyne,
Feb. 12th, 1913.

THE AFTER-CARE ASSOCIATION.—This association for watching over poor persons discharged from asylums for the insane will hold its annual meeting at the Medical Society's Rooms, 11, Chandos-street, Cavendish-square, London, W., on Tuesday, Feb. 25th, at 2.45 P.M. Sir James Moody will preside, and after the usual business a paper, entitled "After-Care in Cases of Mental Disorder and the Desirability of Extending its Scope," will be read by Dr. C. Hubert Bond, a Commissioner in Lunacy, and this will be followed by a discussion.

## CHOLERA AND WAR IN THE NEAR EAST.

(FROM THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

### *Cholera in the Turkish Empire.*

AN exceptional stress of work, caused directly and indirectly by the state of war, has prevented me from continuing the record of the cholera epidemic in this country since the date of my last letter (published in THE LANCET of Nov. 9th, 1912). The apprehensions then expressed have been only too fully realised. Once again the tragedy of a violent cholera epidemic attacking defeated and exhausted troops has been enacted, and the deadly results of this sinister combination have been still further heightened by the complete breakdown of such arrangements as existed for dealing with disease in the stricken army. The story, though the first events are no longer of recent occurrence, should be placed on record in the columns of THE LANCET.

Early in November cholera appeared among the troops at the Tchatalja lines. It spread like fire through stubble. For a while large numbers of sick and dying arrived by every train at the terminus of the railway in Stamboul, and the roads between Tchatalja and the city were credibly reported to be littered with the bodies of soldiers dying and dead from the disease. At the railway terminus itself some wooden barracks were converted into temporary hospitals or receiving rooms, whence the sick were drafted to the other hospitals or the principal mosques in Stamboul. The latter were rapidly filled to overflowing, and here it must be confessed that not only lack of organisation but also no little inhumanity contributed to the disastrous result. It is, no doubt, true that many of the men interned in the mosques—notably that of St. Sofia—were deserters, and so, perhaps, merited scant consideration from the military point of view; but the dictates of humanity should have saved them from the fate that many of them seem to have met there. To speak of St. Sofia alone—the mosque was at one time surrounded by armed troops, who prevented all communication with the outside, while the cholera-stricken men inside were, it is credibly stated, left without treatment and almost without food or care of any kind. The number of deaths in this mosque alone has been variously estimated at figures ranging from 700 to 1500. When, a little later, the building was evacuated and handed over to the Board of Health disinfectors the conditions were foul beyond words. The 10,000 square yards of matting which covered the floor were soaked with cholera discharges and littered with human excreta. Some six or seven layers of this matting were found—the lower layers were black putrescent shreds—showing that whenever new matting had been needed it had been simply laid down over the old. For eight or ten days a bonfire of this matting was burning night and day in the courtyard of the mosque, and it took over three weeks to cleanse and purify the soiled building. It may be mentioned, in passing, that the statement published in some papers, that inscriptions had been found on the floor of the mosque after it was laid bare, was incorrect; the floor is merely one of irregular and uneven stone slabs, without inscription of any kind. It is now re-covered with new matting, and many more years will probably elapse before it is again exposed.

Shortly after the appearance of cholera in the army an endeavour was made to protect the city by stopping all infected and suspected troops and those who had been in contact with them at St. Stefano—a station on the line some seven miles from the walls of Stamboul. For a while the sick and dying were left here without shelter or care of even the most rudimentary kind. Relief first came from a few heroic individuals, working solely from humane impulse and with almost no funds at their disposal, and it was not until later that some tents were put up, by the military and Red Crescent authorities, in the fields and open spaces in and around the village, and some attempt made at a hospital organisation. But it was long before anything deserving the name really existed, and in the meantime a second tragedy, in no way less harrowing than that of the mosques of Stamboul, had been enacted in the fields of St. Stefano.

### *The Privations of War.*

It can never be known how many Turkish troops died

from cholera, but there can be no doubt that the number was an exceedingly high one. On the other hand, in the St. Stefano camps among the cholera cases there were also many men suffering from dysenteric and diarrhœic disorders other than cholera, while many thousands of medical and surgical cases of all kinds remained here for days and even weeks before being drafted into the hospitals of Constantinople. Many of these suffered from great weakness and anæmia, due to privations, accompanied frequently by general anasarca and ascites, without albuminuria or other sign of kidney trouble. Almost as numerous were cases of spontaneous gangrene of one or more extremities. The total number of this latter class of case was extraordinarily large. This condition was brought about by long exposure to wet and cold, to general malnutrition, and to lack of treatment at the onset. Some ascribed it to the wearing of tight putties, and this certainly contributed to the result in many instances; but not only did some of the soldier patients not wear putties, but identical cases have occurred (the writer has one such under treatment at this moment) in civilian refugees who had never worn them.

It is noteworthy that at the time these cases occurred the weather was in no sense exceptionally cold—it was before the frost and snow set in—and the condition, though resembling an extreme degree of frost-bite, was caused by prolonged exposure to a chilly temperature and great wet, rather than to a short exposure to a very low temperature as in the case of true frost-bite. General malnutrition, privation, and the absence of all treatment also played their part, and the remarkably symmetrical character of the gangrene, when both feet were affected, also tends to show that the trouble was as much of central as of local origin. The failure of the commissariat department of the Turkish army in this war has become notorious, and some of the patients in the writer's temporary hospital for wounded have averred that it was no unusual thing to go for two or three days without food, while on one occasion one patient and his comrades were for seven days with no other food than grass and wild herbs.

*Cholera in Constantinople.*

It was inevitable that cholera should appear among the civil population of Constantinople shortly after it attacked the army. The earliest cases were recognised on Nov. 5th. By Nov. 18th 268 cases and 99 deaths had been registered, and the subsequent weekly returns have been as follows:—

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Week ending | Nov. | 25th | ... | ... | 347 | cases, | 193 | deaths. |
| ,, | ,, | Dec. | 2nd | ... | 302 | ,, | 166 | ,, |
| ,, | ,, | ,, | 9th | ... | 540 | ,, | 229 | ,, |
| ,, | ,, | ,, | 16th | ... | 451 | ,, | 244 | ,, |
| ,, | ,, | ,, | 23rd | ... | 276 | ,, | 141 | ,, |
| ,, | ,, | ,, | 30th | ... | 158 | ,, | 74 | ,, |
| ,, | ,, | Jan. | 6th | ... | 117 | ,, | 62 | ,, |
| ,, | ,, | ,, | 13th | ... | 46 | ,, | 29 | ,, |
| ,, | ,, | ,, | 20th | ... | 5 | ,, | 3 | ,, |
| ,, | ,, | ,, | 27th | ... | 4 | ,, | 2 | ,, |
| ,, | ,, | Feb. | 1st | ... | 1 | case, | 0 | death. |

The last case occurred on Jan. 27th, and Constantinople has now been declared cholera-free. The total number of cases has been put at 2515, and that of deaths at 1245. Of these a certain number, but by no means a large proportion of the whole, occurred among the refugees who for the last few months have flocked into the city. It has been estimated that over 100,000 persons have fled into Constantinople from the towns and villages situated in Thrace and Macedonia. They are mostly exceedingly poor, and not a few died on the journey to the capital. But the rest are a remarkably hardy class, and the men have suffered little from illness in spite of their privations. A considerable amount of illness has, however, prevailed among the women and children. At present there is an unusual (but for this city not excessively high) total weekly mortality from small-pox, and measles and scarlet fever are exceptionally prevalent. Typhus does not seem as yet to have made its appearance, and to judge from the records of the winter of 1877-8, when the city was similarly crowded with refugees owing to the Russo-Turkish war, the situation to-day is, from a public health point of view, very much more favourable than it was then.

*Constantinople during the Russo-Turkish War.*

At that time small-pox, typhus, and other diseases decimated the refugees. A valuable report on the conditions which then prevailed still exists, from which it may be gathered that they were at their worst in the months of March and April, so it is, of course, too early yet to make a final comparison between the two epochs. At that time, in St. Sofia alone, 7000 refugees were placed, and of these more than half died. In a school at Ak-Serai only 250 survived out of a total of 650 interned there, and elsewhere the same terrible ratio of mortality was maintained. The doctors, nurses, and lay helpers suffered very seriously from typhus and other diseases contracted from the refugees. But so far, in the present winter, in spite of the presence of cholera which was then absent, there has been no such catastrophe, though it must be confessed that, should the war continue (as seems inevitable at this moment), there are all the materials for a repetition of the events of 35 years ago. Even now there has been a very considerable mortality among refugees on their trek to this city, and also in less favoured towns, such as Salonica, and in the various districts of Asia Minor to which they have been, and still are being, transferred in large numbers.

The measures taken to control the cholera epidemic in this city have been fairly adequate. A large sum of money was voted by special decision of the Board of Health (whose funds are not primarily intended for such internal measures) to supplement the measures taken by the municipal and military authorities. Cholera hospitals were opened in various parts of the town, squads of disinfectors were organised in all the municipal quarters, and a large additional medical and subaltern staff was engaged, and at no time could it be said that the epidemic was out of hand and beyond the control of the combined authorities.

*Cholera in the Provinces.*

In the provinces the following figures have been registered in continuation of those furnished in my last letter:—

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Week ending | Oct. | 9th | ... | ... | 66 | cases, | 101 | deaths. |
| ,, | ,, | ,, | 16th | ... | 33 | ,, | 89 | ,, |
| From | Oct. | 16th to | Oct. | 29th | 72 | ,, | 116 | ,, |
| ,, | ,, | 29th ,, | Nov. | 8th | 95 | ,, | 176 | ,, |
| ,, | Nov. | 9th ,, | ,, | 16th | 84 | ,, | 82 | ,, |
| ,, | ,, | 16th ,, | ,, | 23rd | 160 | ,, | 218 | ,, |
| ,, | ,, | 24th ,, | Dec. | 2nd | 44 | ,, | 47 | ,, |
| ,, | Dec. | 3rd ,, | ,, | 11th | 61 | ,, | 3055 | ,, |

Since the last-named date no further bulletin has been issued. During the first weeks covered by the table the disease was confined to various parts of Asia Minor and Northern Syria, including serious outbreaks in Aleppo and Damascus, and smaller ones in Baalbek, Alexandretta, and other towns. The returns were (as usual) very incomplete, and only towards the end included the figures for Mecca and Medina. As stated in my last letter, cholera broke out in the Hedjaz towards the end of September. It had before that appeared among the pilgrims of several pilgrim ships performing quarantine at the Camaran lazaret. By Oct. 5th the disease had reached Medina, imported by caravans from Mecca. It continued to cause a moderate degree of mortality among the pilgrims until the fêtes of Kûrban Bairam began (on Nov. 20th); and then, when the agglomeration of pilgrims was at its highest, the figures suddenly rose, and for a week or more from 400 to 500 deaths daily were registered among the pilgrims at Mecca, at Mina, and Arafat, and on the road between these places. The total number of cases or deaths has never been ascertained exactly, but the mortality has been estimated at something between 5000 and 9000. The disease appeared in Jeddah, with the returning pilgrims, on Nov. 25th; for a few days it caused over 50 deaths a day here, but the outbreak did not last long, and appears to have been over by the middle of December, after causing some 400 or 500 deaths.

A considerable number of imported cases of the disease were seen at the Tor Lazaret among pilgrims returning northwards, but fortunately the infection did not pass the Suez Canal, nor was it carried by the Hedjaz Railway from Medina to Damascus and the Syrian towns. This was no doubt partly due to the measures taken at the lazarets of Tor and Tebuk, and partly to the fact that the season of returning pilgrimage now falls in the winter months. The limitation of this outbreak of cholera, which was produced by a virus newly imported from the homes of the disease in India and the Dutch Indies, to the Hedjaz and the basin of the Red Sea was an exceedingly fortunate fact. There can, I think, be little doubt that the ravages of cholera among the Turkish troops above described were due

to a cholera microbe which had been for many years in Europe, and had lost some of its virulence in that period; and that, disastrous as were the results it produced, they would have been very much more so had a cholera germ newly imported from India or the Far East been introduced among the exhausted and famished men of the defeated Turkish army.

It has to be added that, at the moment of writing, large numbers of cases of diarrhœic disorders are under treatment in the camp hospitals at St. Stefano, and it is more than suspected that cholera exists among them. With the renewal of the war (which now appears inevitable, if it has not already begun) there must be serious apprehensions of a fresh outbreak of the disease in the Turkish and perhaps in both armies.

*Cholera in Odessa.*

Quite recently a few cases of cholera were reported from Odessa. On Jan. 8th an inhabitant of the town, a woman, was admitted to the municipal hospital suffering from the disease (bacteriologically confirmed), and died the next day. Between that date and Jan. 21st 4 more cases of the disease occurred; no further cases have been reported since the last-named date.

Constantinople, Feb. 4th.

# THE ALL-INDIA SANITARY CONFERENCE.

(FROM OUR OWN CORRESPONDENTS.)

*Introductory.*

THE value of congresses and conferences in promoting knowledge and circulating new ideas is not universally accepted, although it is acknowledged by many. The practical results rarely realise the theoretical ideal. Some say they are overdone and that, although they bring together those who are willing and able to give their time to such methods of education, no real work is ever done and little practical good results.

The recent All-India Sanitary Conference, which took place in Madras from Nov. 11th to 15th, 1912, should become an annual function, for it has for its object the discussion of all sanitary questions in India. The importance of these has lately received much attention from the Indian Government, and by bringing together the flower of Indian sanitary experts opportunity is given for conferring on the many sanitary problems which must be dealt with in this country. The recent Congress included some 76 delegates nominated by the various Governments and representing all classes and all branches of sanitary science—besides some delegates whose position on the Conference it is difficult to understand; but it lacked that element of outspoken discussion of Western Countries, or rather it was overshadowed by the official element which pervaded the assembly. No doubt in India this, much as it is to be regretted, is difficult to avoid, for a spontaneous conference of scientists is impossible in India without the financial assistance and support of Government. The municipalities themselves would be unable to organise any such assembly, nor do any societies or institutes exist which are capable of doing so. The annual congresses of the British Association, different sanitary institutions, the British Medical Association, and other such organisations, meet under different conditions.

The Government of India, with the coöperation of the various Governments of the Presidencies, organised the recent Conference, and did it exceedingly well. The President, Sir Harcourt Butler, I.C.S, and his secretary, the Hon. Mr. Ludovic Porter, I.C.S., assisted by the Director-General of the Indian Medical Service, Sir C. Pardey Lukis, I.M.S., Surgeon-General W. B. Bannerman, I.M.S., of the Madras Presidency, the Sanitary Commissioner to the Government of India, Major J. C. Robertson, I.M.S., and the Sanitary Commissioner for the Madras Presidency, Captain W. A. Justice, I.M.S., with two or three Members of Council and several members of the Indian Civil Service lent an official air to proceedings that were interesting throughout. The majority of the delegates held Government posts, sanitary, medical, or engineering, and these, with a sprinkling of Indian medical men (appointed for reasons possibly well known to the various Governments, but difficult to understand from the standpoint of sanitary science), and, with the health officers and sanitary engineers of the larger cities of India, made up an assembly which should be capable of advising their Governments on the sanitary problems of the day. But they were more or less compelled to take an official view, and many questions which would in England be dealt with in an open and free discussion did not receive the consideration they deserve, and the sanitary commissioners or the sanitary engineers being Government officials could not break away through red tape for fear of offending the higher authority; while, on the other hand, every consideration was given to those representatives whose position as delegates it is difficult to recognise. However, there can be no two opinions as to the value of the work done at the Madras Conference, or the impetus it will give to sanitary science in India. The papers read, or taken as read, will amply repay perusal, but too much was attempted, and the delegates were flooded with literature and talk which will take much time for digestion. The immense amount of matter circulated could barely be glanced through, and papers containing questions of most vital importance were introduced and discussed without having been read by the delegates. There is much room for improvement in this direction, and the next Conference will no doubt be organised to remedy this.

In Sir Harcourt Butler the Conference had a most urbane and capable President, while Mr. Ludovic Porter carried out his onerous duties with tact and geniality. Sir Pardey Lukis presided at the Malaria Conference with much skill and forbearance, while his knowledge of the subject and his explicit statements much facilitated the work.

The strenuous duties of organising the assembly and providing conveyances, accommodation, and refreshment, and supplying the delegates with the papers printed and corrected, devolved on Major Robertson, Captain A. G. McKendrick, I.M.S., and Captain Justice, who performed their duties in a manner that elicited the approval of everyone, while the officials of Madras contributed in no small degree to the success of the Conference by providing interesting excursions and investigations into the many excellent sanitary arrangements of the city. The hospitality of the organisers of the Conference and His Excellency the Governor, and the Director-General and the officers of the Indian Medical Service, and the people of Madras was profuse, and the delegates who attended the Conference will look back with pleasure and profit to the All-India Conference of 1912.

*The President's Address.*

The Conference was opened by Sir HARCOURT BUTLER in an able and brief address, welcoming the delegates, and pointing out how much importance was attached to that Conference by the Government of India. He said that the union of education and sanitation under the same department was no accident, since people must be educated to appreciate the objects of hygiene and sanitation. There were signs, he said, of a sanitary awakening in India. The establishments of the revived post of Sanitary Commissioner proved this, while to the Director-General of the Indian Medical Service had been allotted the bacteriological and research work to avoid its divorce from medical practice. A progressive policy of decentralisation was being followed. Eight additional deputy sanitary commissioners were being created, for which appointments Indians possessing the necessary qualifications, as well as officers of the Indian Medical Service, would be eligible. He referred to the work on cholera and kala-azar conducted by selected medical officers, to the stegomyia surveys, and to the purpose to follow these up with inquiries into relapsing fever, elephantiasis, dysentery, and various types of pneumonia.

*Town Planning.*

Mr. E. G. TURNER, I.C.S., the town planning expert of the Government of Bombay, explained how those methods are to be adopted in the suburbs of the city.

In the afternoon Mr. J. P. ORR, I.C.S., chairman of the Improvement Trust, Bombay, read an interesting, if somewhat lengthy, paper on Light and Air in Dwellings in Bombay, in which he spoke of the work of the Improvement Trust and his proposals to deal with insanitary houses.

After some remarks on town improvement in Lucknow by the Hon. Rai GANGA PRASAD VARMA Bahadur, a paper on

the Housing of the Working Classes in Large Cities in India was read by Dr. J. A. TURNER, and was followed by other papers dealing with building by-laws and various town improvements and congested areas, and the necessity for more stringent laws and by-laws.

After some discussion on the various papers read, resolutions were passed recommending the introduction, on modern lines, of town planning schemes, and relief of congested areas, and the adoption of provision on the lines of the English Housing of the Working Classes Acts, 1890 and 1909, adapted to local conditions and the habits of the people, and suggesting as a measure of demonstration and education that model towns should be constructed on these lines.

The importance of the questions which came before the Conference on the first day cannot be exaggerated, but to what practical issue these resolutions will lead it is very difficult to say. It was pointed out that the building by-laws of Bombay were defective in many ways, while those of Calcutta were fairly satisfactory. In the former city the existence of overcrowded and insanitary areas is one of the chief factors in the sanitary condition of the city, while in other cities of India the overcrowded areas are small and easily improved, as they are not comprised of high, many-storeyed, overcrowded buildings as in Bombay.

On the second day arrangements were made to show the delegates the sanitary engineering sights of Madras and the interesting sewage disposal and water-supply works, under the direction of Mr. J. W. Madeley and Mr. E. P. Richards, engineers to the Madras municipality.

*Plague.*

Papers on Preventive Measures, by Lieutenant-Colonel S. BROWNING SMITH, I.M.S., and Captain W. C. ROSS, I.M.S.; on Rat Destruction, by Major W. GLEN LISTON, I.M.S.; on the Spread of Plague by the Grain Trade, by Captain F. NORMAN WHITE, I.M.S.; on Antiplague Vaccine, by Captain W. D. H. STEVENSON, I.M.S.; on Plague in Madras Presidency, by Captain TAYLOR, I.M.S.; on the Annual Reappearance of Plague, by Lieutenant-Colonel BROWNING SMITH; and on the Carrying over of Plague Infection during the Non-epidemic Season, by Captain J. C. G. KUNHARDT, I.M.S., were read and discussed.

Resolutions were passed to the effect that an encouraging advance in the knowledge of the etiology and epidemiology of plague has taken place; that the public should be strongly impressed as to the importance of the rat as a factor in the causation of this disease; that preventive measures should be pressed during non-epidemic periods; and that grain stores were a source of danger.

*Travelling Dispensaries.*

Travelling dispensaries formed the subject of papers by Surgeon-General BANNERMAN and Captain H. ROSS, I.M.S., and led to some discussion, with the result that a resolution was passed advocating their adoption.

*Water-supply.*

A whole day was taken up with this very important subject. Mr. CURTIS, I.C.S., Commissioner, C.D., came from Poona to explain the financial position of the Government of Bombay with regard to the improvement of the water-supplies of the Presidency. Major W. W. CLEMESHA, I.M.S., read three papers respectively, Silt Removal in the Hooghly, Mechanical Filters, and the Bacteriological Standard of Purity. Dr. F. MAITLAND GIBSON, Assistant-Surgeon E. C. R. FOX, and Rai KAILAS CHANDRA BOSE Bahadur, C.I.E., dealt with the chemical and bacteriological treatment of water; Captain C. L. DUNN, I.M.S., Mr. C. H. WEST, and Mr. J. M. LACEY discussed the filtration of water; while Messrs. MILLER BROWNLIE and NANJUNDAYYA BELVADI explained the system of the working of tube and artesian wells.

Discussing filters, Major CLEMESHA said that pressure filters gave very poor results from a bacteriological point of view, and could not be relied on to make a polluted water safe. Gravity filters gave very good results.—Mr. MADELEY disagreed with Major Clemesha that the initial cost of rapid sand filters was considerably less than slow sand filters; the relative cost, he said, depended largely on the cost of the land available and on cost of materials.—Dr. A. G. NEWELL pointed out that all the tests had been done with only one type of mechanical filter; that it was not true that the Jewell filter gave the dose of chemicals automatically, though it was true of the Paterson filter; and that the wash water should be sometimes as high as 20 per cent. of the total output of the water at once put the filter out of the range of practical politics.—Mr. DISNEY, however, said that Major Clemesha had over-estimated the quantity of water required for washing Jewell gravity filters. The Government of Madras are having proper tests under equal conditions carried out with the Jewell, the Paterson, and Mather and Platt's filters.

In his paper on Bacteriological Standards of Purity, Major CLEMESHA promulgated an additional test, while the conclusion might be drawn from Dr. MAITLAND GIBSON'S interesting paper on the Analysis of Potable Waters in the Tropics that on the whole we are not any further advanced in this question, especially as regards Indian waters.

In the afternoon a visit was made to the King Institute at Guindy, where Dr. MAITLAND GIBSON, Captain W. S. PATTON, I.M.S., and Captain F. W. CRAGG, I.M.S., gave most interesting demonstrations on the Manufacture and Storing of Vaccine Lymph, Microbiology of Flies, Ticks, Bugs, Lice; and a paper on Sleeping Sickness was read by Captain F. P. MACKIE, I.M.S.—The Analysis of Water by Dr. GIBSON proved also of great interest to the delegates, while the various filter beds and model sewage disposal works were inspected by the delegates interested in those branches of sanitary science.—The hospitality of Mr. Justice Gibson and Mrs. Gibson, in the grounds of the institute, proved a delightful interlude to the strenuous work of the delegates.

In the early hours of the fourth day the waterworks were inspected, and in the forenoon the section broke up into two subdivisions. In one, cholera, dysentery, and diarrhœa, and papers on sewage disposal, &c., were dealt with. In the other, tuberculosis, fever, and relapsing fever were discussed.

*Cholera, Dysentery, and Tuberculosis.*

Major E. D. W. GREY, I.M.S., read four papers dealing with the cholera vibrio in the biliary passages, cholera convalescents and contacts, epidemics of cholera caused by a carrier, and on disinfection in cholera. Papers were also read by Captain T. H. GLOSTER, I.M.S., on the Bacteriology of Cholera from investigations made in Bombay; by Captain W. C. ROSS on the Epidemiology of Cholera, in which he somewhat discounted the importance of water carriage in the spread of cholera; by Major S. A. HARRISS, I.M.S., on the Effect of Pipe-water Supplies on the Reduction of Cholera; Methods used in Bombay Presidency for Checking the Spread of Cholera in Urban Areas, by Major H. A. FORBES KNAPTON, I.M.S.; on Methods of Treating Cholera Outbreaks in the United Provinces, by Captain DUNN; and on the Bacteriology of the Cholera Vibrio and its Relation to the Spread of the Disease from the Point of View of the Health Officer, by Dr. TURNER. All these papers provided an immense amount of useful and interesting matter for discussion. With the material at the disposal of the bacteriologists of India, and with the improved laboratory technique, it is much to be regretted that some more definite statements were not forthcoming.

Resolutions were passed that there is strong evidence to show that in India, in addition to contaminated water, the four following factors are of great importance in the spread of this disease: (*a*) Convalescents discharged while still infected; (*b*) healthy persons who have been in contact with cholera cases, and have acquired the infection without showing any signs of the disease, but who are excreting cholera vibrios in their stools; (*c*) flies; and (*d*) the personal habits of the people.

*Dysentery* was ably dealt with and discussed by Major W. F. HARVEY, I.M.S., Captain J. CUNNINGHAM, I.M.S., Captain J. MORRISON, I.M.S., Captain A. W. GREIG, I.M.S., and others.

The resolution regarding dysentery was purely negative, and recommended a fresh start in the investigation.

*Tuberculosis* especially gave rise to an interesting debate. Dr. P. S. CHANDRA SEKHAR read a paper on the Prevention of Tuberculosis in Madras, and Lieutenant C. J. FOX, I.S.M.D., one on Tuberculosis in its Relation to Public Health. In the discussion that followed Dr. NEWELL said there were three stages of the disease to be considered for preventive action. In the implantation stage in early childhood it was necessary to improve the ventilation of schools and homes, and the relief of congested areas. Expensive measures were not a necessity; open sheds with corrugated

roofs could be used in place of the present unhealthy type of schools inside cities. The next stage was the earliest period at which it could be diagnosed. Here tuberculin dispensaries were recommended. The country was not ripe for sanatoria. The homes of the people should be tackled first. He regarded compulsory notification from medical men as essential.—Major GRAHAM said that in the United Provinces the sanatorium in the Kumaon Hills had to refuse many applicants for admission. He considered that it would be wrong in the present stage of our knowledge to introduce dispensaries wholesale, as little supervision would be given.—Dr. G. J. RUTHERFORD said that a dispensary and a sanatorium were being started in Ceylon. Notification was not compulsory in Ceylon, but was so in Colombo.—Rai Bahadur KAILAS CHANDRA BOSE, C.I.E., regretted that the public did not call more for both sanatoriums and dispensaries.—Dr. C. A. BENTLEY stated that his experience in Bengal showed that 5 to 10 per cent. of the mortality in rural areas was from phthisis. He thought many cases came to towns from rural areas, and so there was a difficulty to get these cases early. Hence he doubted the utility of sanatoriums.—Dr. NEWELL referred to the use of cattle dung in flooring as a dangerous element.

Regarding tuberculosis it was agreed that a thorough and full inquiry should be made into the incidence of the disease in India, and the usual measures were suggested, including improvement in general sanitation, opening up of congested areas, light and air, the promotion of antituberculosis societies, tuberculin dispensaries, control of milk supplies, and compulsory investigation of the disease in large towns.

*Mediterranean Fever.*

Major HARVEY read a paper, by Captains PATTERSON and BROWN, I.M.S., on Reflections and Proposals Resulting from an Inquiry into Epidemics of Malta Fever occurring in the 37th Lancers and 10th Lancers in India. The paper dealt with three distinct outbreaks, and raised the necessity for further investigation into the prevalence of the disease in India, its cause, and best means of detection and prevention. —Captain F. P. MACKIE, I.M.S., agreed with the authors' views, and said the disease was not readily recognised. He knew of one epidemic regarded by one officer as beri-beri and another as kala-azar, which on investigation by the Sleeping Sickness Commission was proved to be Malta fever. —Dr. NEWELL said that Malta fever definitely existed in Lahore, and goats examined by a local Indian Medical Service officer were found to be infected. Goats were often kept inside houses in cold weather, and it was probable that their urine was infected.—Dr. BENTLEY said that kala-azar often resembled Malta fever. An undulant fever was seen in many cases of kala-azar.—Major P. N. O'G. LALOR, I.M.S., invited attention to a peculiar form of fever in Burma in which the fever was distinctly undulant, and heavy perspiration with other symptoms suggested Malta fever.—Dr. KORKE said that in 56 cases of kala-azar he had seen in Madras none of them showed any signs of undulant fever.—Dr. BENTLEY replied that both perspiration and undulant fever were seen in many cases of kala-azar.

*Enteric Fever.*

Major E. D. W. GREIG, I.M.S., read a paper giving an account of the results obtained from the working of the recommendations of the Enteric Fever Research Committee of the Government of India.

*(To be concluded.)*

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*The Manchester Tuberculosis Scheme.*

THE Manchester scheme for the treatment of tuberculosis has now practically reached its final form, though it has still to receive the sanction of the city council as well as the approval of the Insurance Commissioners and the Local Government Board. The scheme has been prepared by the tuberculosis subcommittee of the sanitary committee of the corporation. It includes the two units—dispensary and sanatorium. The dispensary is to be a receiving house and centre of diagnosis, a clearing house and a centre for observation, for curative treatment, for the examination of contacts, and for "after care," an information bureau, and an educational centre. The chief tuberculosis officer is to be independent of the medical officer of health in clinical matters, and is to have a salary of not less than £500, with assistants when necessary. As to the sanatorium, one bed is advised for every 5000 of the population, which would give Manchester about 150 beds. The incidence of phthisis is greater on Manchester than on the rest of the country in the ratio of 3 to 2. The scheme will embrace insured and uninsured persons, and will provide sanatorium accommodation with 412 beds. The annual cost of the scheme is estimated at £39,604. The Local Insurance Committee will have £15,000 a year, and it is proposed that £8000 of this sum be handed over to the corporation. Thus the annual expenditure will be £31,304 more than the income. Half of this will be paid by the Treasury, and half out of the rates, according to the provisions of the Act.

*Manchester Royal Infirmary Annual Report.*

From the annual report of the Manchester Royal Infirmary it is gathered that the aggregate number of cases of all kinds exceeds that for 1911. The board of management, in discussing the possible effect of the National Insurance Act upon voluntary hospitals, state that the work of obtaining new subscribers has been seriously interfered with. They are thankful, however, that the result of the year's work is a slight increase in annual subscriptions. If, however, the National Insurance Act had not been passed they do not doubt that the hospital would have gained a very substantial increase in the subscription list. One of their difficulties has been a widely spread belief that hospital treatment was included in the Act, and would be, or should be, provided at the cost of the State. They declare that the continued provision of hospitals is not merely a gratification of the collective philanthropy of the community, but an economic necessity. They also point out that special treatment for serious diseases of the eye, ear, throat, diseases of women, and for ailments needing X rays, and other treatment not provided for in the Act will be required as hitherto, while no curtailment of the out-patient work will arise in connexion with the uninsured poor. When the hospital was removed to the present site it was pointed out to the trustees that £12,000 in new annual subscriptions would be required to enable the institution to pay its way. In 1912 the total sum received in this way was £4024, so that there is still a deficit of £8000 a year in annual subscriptions. Nor is that all. A sum of £25,000 is required to build and equip the central branch for accidents in the city.

*Colne Typhoid Epidemic.*

Up to the present the cases of enteric fever at Colne number 68, with four deaths.

Feb. 10th.

## BRISTOL AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

*University of Bristol: Memorial to the late Chancellor; Honorary Degrees.*

ON Feb. 7th the council of the University received a communication through the chairman, Mr. Lewis Fry, from the sons of the late Chancellor, Mr. Henry Overton Wills. Mr. G. A. Wills and Mr. H. H. Wills have offered £150,000 for the erection of a new block of buildings, which sum includes £20,000 endowment for upkeep; and Mr. Melville Wills offers £20,000 towards general endowment purposes. A committee was gratefully appointed to consider these offers. Mr. G. H. Oatley, the architect of the recently built wings of the University, has drawn up provisional plans. These, if accepted, will not merely constitute a very large addition to the University premises, but also will provide a commanding frontage on a main thoroughfare, and a tower which will be one of the most prominent features of the city. These buildings will be erected on the site now occupied by the premises recently evacuated by the Blind Asylum, and at present used for University libraries. They will contain the main administrative buildings, including the principal entrance, an assembly hall to seat 1200 persons, council room, registrar's department and general offices, the arts library, the medical library, and a considerable addition to the space available for teaching and student life, which also will be augmented by the fact that the premises

now used for administration will once more become available for teaching purposes. The tower will be nearly 200 feet high, and as it will stand at the top of Park-street, the main thoroughfare leading from the city to Clifton, it will be a dominant feature of the streets of Bristol. Through its base, which will be 57 feet square, an entrance to the whole University will be provided, with a double staircase leading to the great assembly hall. It is hoped that building will begin in 1914 and be completed in 1917. These gifts bring the total sum contributed by the Wills family to the University up to £330,000. It was Mr. Overton Wills's gift of £100,000 that brought the University into being, and this further gift will help to keep his memory green for future generations.—The controversy concerning the granting of honorary degrees on a large scale, as practised at the installation of Lord Haldane as Chancellor of the University of Bristol, has attained excessive proportions. Aspersions have also been thrown on the chairman of council, Mr. Lewis Fry, which are deeply resented not only by those who know from the inside the value of Mr. Fry's work for the University, but also by all his fellow-citizens. It has been further suggested that there is constant dissension between the council and the teaching staff; this has been repudiated by the Senate in a resolution forwarded to council. It is felt generally that the matter has been quite fully discussed, and that no useful purpose will be served by prolonging the controversy.

*Bristol General Hospital and Insured Persons.*

The committee of the Bristol General Hospital has given a lead, in a circular letter issued to the press and to all the subscribers, which will probably be followed by all the other local institutions in regard to the treatment of insured persons. It states the intention of the committee to act in harmony with the resolutions passed by the governors of St. Bartholomew's Hospital which will exclude from hospital treatment all insured persons suffering from such ailments as can be dealt with by the panel practitioner, while admitting urgent cases and cases in which a second opinion and special treatment are desirable. The letter gives as a reason for this decision the desire of the committee to use the funds of the hospital and the energies of the staff to meet such needs on the part of the sick poor as cannot be met in any other way. The new rules will come into force from the beginning of March.

*Clifton Dispensary.*

At the annual meeting of subscribers it was stated that during the past year 2730 cases had been admitted to treatment at the Clifton Dispensary, a small reduction on previous years. It was urged that money would still be needed in spite of the Insurance Act, since this does not yet provide for the treatment of the dependents of insured persons and others who are outside its scope. The committee has decided to exclude all insured persons from the benefits conferred by the dispensary. Notwithstanding this decision subscriptions are said to be coming in satisfactorily.

*The Treatment of Tuberculosis in Bristol.*

The Bristol health committee are taking steps to provide adequate space for sanatorium treatment by acquiring a larger share of the beds at the Winsley Sanatorium and by adding new premises at Ham Green, near the city fever hospital. A few cases have already been treated at the latter institution, and their favourable progress has encouraged the committee to believe that good results will be secured when new and specially designed premises are available there. There is still some doubt as to the exact extent of additional accommodation required. Provision is being made for dispensary treatment. It is announced further that a voluntary committee has taken in hand the provision of open-air schools and other necessaries for the treatment of tuberculous school children. Land will be acquired at a nominal rent, thanks to the kindness of Lady Greville Smyth, and it is hoped that if funds are forthcoming the school may be begun in the summer of this year.

*Bristol Insurance Committee.*

The Insurance Committee is getting to work, and several matters of medical interest were dealt with at its last meeting. There have so far been 228 applications for sanatorium benefit: of these, 47 are receiving sanatorium treatment, 56 dispensary treatment, and 49 domiciliary treatment. The sum allotted by the Commissioners (£4300 per annum) is not nearly adequate; it was suggested that £8000 would be needed for the treatment of insured persons suffering from tuberculosis. The medical service subcommittee has been appointed; the five medical representatives are Mr. H. F. Devis, Dr. T. M. Carter, Mr. G. S. Page, Mr. T. A. Collinson, and Mr. G. Scott Williamson. Dr. Bertram M. H. Rogers has been appointed Medical Inspector at a retaining fee of £50 for three months.

*The Exeter Infectious Diseases Hospital.*

The Local Government Board has granted permission to the Exeter city council to borrow the sum of £15,190 for the purpose of the extension of the Infectious Diseases Hospital. The council has accepted a tender for the scheme, but owing to the increase in the cost of building materials it was found necessary to ask permission of the Local Government Board to borrow an additional £2360.

*Medical Officer of Health for 40 Years.*

The Taunton press has been drawing attention to the fact that Dr. Henry James Alford has held the appointment of medical officer of health for 40 years. Dr. Alford states that the population of Taunton in 1871 was 14,957; in 1911 it amounted to 22,563. The death-rate for the decade 1871 to 1881 was 21·2, and for the ten years ending 1911 the death-rate was 14·6 per 1000. In 1873 the inhabitants of Taunton obtained their water mostly from wells, many of which were polluted; at the present time the water company's reservoirs have storage capacity for 158,000,000 gallons.

*Devon County Council and Tuberculosis.*

The Central Tuberculosis Dispensary, which has been established by the Devon county council at Exeter, was formally opened on Feb. 3rd. The medical officer for the institution is Dr. H. E. Goulden, who was formerly school medical inspector for the Barnstaple district of Devonshire.

*Death of Mr. George Mark Archibald Rudkin, L.R.C.P. & S. Irel.*

Mr. G. M. A. Rudkin died at his residence, 2, The Crescent, Teignmouth, Devon, on Jan. 28th. Mr. Rudkin, who qualified as L.R.C.P. & S. Irel. in 1870, had been for more than 30 years in practice at Teignmouth, and at the time of his death was consulting surgeon to the Teignmouth Infirmary and to the convalescent home. He was medical officer to several friendly societies, and had been surgeon to the Oddfellows for 25 years. He took a great interest in all local matters connected with Teignmouth, and was president of the local literary society. Mr. Rudkin will be much missed in Teignmouth. His funeral took place on Feb. 1st, and the attendance included several members of the profession.

Feb. 10th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Scottish Poor-law Medical Officers' Association.*

THE annual meeting of the Scottish Poor-law Medical Officers' Association was held at the St. Enoch Hotel, Glasgow, on Jan. 31st. The report for 1912 stated that in every case of retirement the outgoing medical officer had supplied all necessary information for the incoming officer, and that there had been no complaints of unjust treatment and no case of dismissal of an officer by his parish council. This improvement upon past years justified the formation of the association. Vacancies existed in 17 parishes, several of them appearing year after year, owing to isolation, inadequate income, and so forth. In one case of a parish without a medical officer a neighbouring practitioner found it absolutely necessary to look after several paupers, and rendered his account to the parish council, which, however, refused to pay it, as the inspector stated he gave no written instructions to the practitioner to attend. The medical man was advised not to attend paupers in future without an order, to send in his account again, and on refusal to acquaint the Local Government Board with the facts, and, failing satisfaction, to raise a small debt action in the sheriff's court. As nothing further has been heard the matter is probably settled. With regard to the difficulty in

sparsely populated districts of attending insured persons who live great distances—ten miles and upwards—from the doctor, it was advised to agree to attend gratis within two miles, but to demand in other cases adequate mileage from the Insurance Commissioners, and failing that to insist on provision being made for the insured as a private patient. Correspondence with the Local Government Board as to the legality of a certain parish council advertising its appointment as being for £80 a year when £50 were from the Medical Aid Association and only £30 from the parish, was reported as unsatisfactory. The honorary secretary of the association, who had performed the duties of his office for 15 years without reward, was voted an annual honorarium of 10 guineas, to be retrospective for 1911. The financial report showed a balance in band of £188 7*s.* 1*d.*, but an appeal is urgently made for new members, especially in view of the losses by death sustained by the association.

*Royal Faculty of Physicians and Surgeons, Glasgow.*

At a meeting of the Royal Faculty of Physicians and Surgeons of Glasgow, held on Feb. 3rd, Sir William Macewen, professor of surgery in the University of Glasgow, on the motion of the president and council, was unanimously elected an Honorary Fellow of the Faculty.

*Aberdeen Royal Infirmary and Asylum Annual Report.*

The annual report of the Aberdeen Royal Infirmary shows that the total number of in-patients treated during the year ending December, 1912, was 3083, and of out-patients 18,112, total 21,195, a decrease of 838. 1882 operations were performed. The death-rate was about 8 per cent. of cases treated, or deducting deaths within 48 hours of the patient's admission 6·4 per cent. The ordinary income for 1912 was £10,981 6*s.* 9*d.*, as against £11,836 2*s.* 5*d.* for 1911. The ordinary expenditure was £14,470 17*s.* 5*d.*, as against £13,155 13*s.* 8*d.* for 1911, showing a deficit for the year of £3489 10*s.* 8*d.* The directors consider that the decrease in contributions from employees in works is brought about by the National Insurance Act, the greater part of the decrease having taken place after the insurance contributions became exigible. While patients' contributions have increased as a whole, the voluntary donations have declined. The increase in the ordinary expenditure is accounted for by increases in every department except those of surgery and dispensary, by renewal and additions to the linen and bedding, increased cost of fuel, general repairs, and National Insurance expenditure. The extensions of the hospital also increase the cost of administration. The directors record with regret the death last April of Dr. Angus Fraser, consulting physician to the infirmary. During the year Professor David W. Finlay and Dr. George M. Edmond, after having served the hospital for 21 and 22 years respectively, have retired. In their places were appointed as physicians Dr. A. H. Lister and Dr. W. R. Pirie. Dr. A. W. Falconer and Dr. W. F. Croll were appointed assistant physicians, and Dr. Alexander Ogston anæsthetist.

*Aberdeen Royal Asylum.*

In their reports H.M. Commissioners in Lunacy continue to bear favourable testimony to the satisfactory condition of this institution and the manner in which it is conducted. The income amounted to £34,234 5*s.* 1*d.* and the expenditure to £30,058 17*s.* 9*d.*, being advances on last year of £734 6*s.* 6*d.* and £1065 19*s.* 5*d.* respectively. Both increases are attributable to the larger population resident in the asylum during the year.

*Proposed Joint Sanatorium for Forfarshire.*

At a meeting of the Dundee Public Health Committee, together with representatives of the county council and of all the Fifeshire burghs, held in Dundee on Jan. 24th, the question of coöperating in regard to the provision of one large sanatorium suitable for the needs of the represented area was discussed. The general opinion was in favour of coöperating with Dundee. It was stated that negotiations were in progress with the directors of the Dundee Royal Infirmary for the purchase of Sidlaw Sanatorium at Auchterhouse, and if these negotiations came to a satisfactory conclusion, this would probably prove the most suitable and most economical plan. The matter was left open.

Feb. 11th.

# IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Insurance Act in Ireland.*

THE Commission appointed by the Chancellor of the Exchequer "to consider and report as to the advisability of applying to Ireland the provisions of the National Insurance Act, 1911, with respect to medical benefit, and as to the alterations, legislative and otherwise, which in the event of such provisions being applied would be desirable in the systems for affording medical relief at the present existing," is to meet on Feb. 17th and 18th in Belfast to hear evidence from that city and Derry, and it will sit subsequently (Feb. 19th, 20th, and 21st) for three days in Dublin to hear witnesses from the rest of Ireland. The Commission is anxious to make a report soon so as to enable the Government to introduce an amending Bill next session—that is, in March. Evidence will be tendered by the Friendly Societies, the medical profession, and the hospitals. The profession in Ireland are in favour of medical benefit being extended to Ireland, provided this is done on right lines, avoiding the mistakes made in England, but very serious opposition may be offered—at least in the industrial towns—to any scheme by which medical men will be paid in Ireland for attending insured people and their wives and families on the same scale as in England is paid for attending the insured alone. In Belfast a great deal of objection has been made to attending the members of the Ancient Order of Hibernians on this plan, and it is rumoured that, in order to carry out the method, some whole-time medical officers are to be imported from Glasgow. At a meeting of the Belfast Local Medical Committee held on Feb. 4th the arrangements made with the Local Insurance Committee in reference to tuberculosis treatment were tabled, as well as a report in regard to negotiations going on between the Public Health Committee of Belfast and the medical profession as to a tuberculosis scheme for the city of Belfast. A deputation from the Conjoint Committee of the Irish and British Medical Associations waited on the Local Government Board in Dublin on Feb. 7th in regard to persons receiving maternity benefit and also with respect to other points arising under the Insurance Act. The members of the deputation (Mr. D. Walshe, Dr. L. Kidd, Dr. D. O'Connor, and Professor A. H. White) wished to know, among other things, whether women entitled to maternity benefit were "poor persons" within the meaning of the Act, and whether guardians were justified in giving *red* tickets, which required compulsory attendance on the part of the dispensary doctors, for the purpose of a confinement only. Sir Henry Robinson, the vice-chairman, in an oracular reply, said it would not be right in all cases to issue such red tickets; all doctors, however, with dispensary appointments must attend on every *red* ticket, but it would not be fair to the ratepayers to issue a ticket in every case. But, he went on to say, there might be many cases where it was not only excusable but right to issue such a ticket even where high wages were paid, as, for instance, in a severe confinement, or where there was great poverty, or where the husband was sick and out of employment. Therefore the doctors should not look too critically at tickets issued where there was any element of doubt; while, on the other hand, guardians and relieving officers should be careful not to throw unnecessarily on the rates and on the doctor the burden of relieving those who were placed by the National Insurance Act beyond the need of Poor-law relief. In Wales it was laid down that 15*s.* for the doctor for attendance during labour and 5*s.* subsequently should be paid and recovered from maternity benefit. If the doctors in Ireland—in dispensary practice—could agree upon some similar fees he (Sir Henry Robinson) believed it would lessen the probability of abuse of red lines, and in the long run would result in the insured persons becoming wholly independent of Poor-law relief in any shape or form. He then read a circular to be issued by the Local Government Board to boards of guardians on the matter. Some of the medical men on the deputation expressed satisfaction, but Dr. Walshe objected that nothing was settled, as it would still be discretionary with guardians to give red tickets in cases of maternity benefit.

*The Tuberculosis Prevention (Ireland) Bill.*

Mr. Birrell has found himself compelled, if the Tuberculosis Prevention Bill is to pass into law this session, to

drop the most important clause—that of universal compulsory notification of tuberculosis. Under the Act of 1908 it was left optional with local authorities to adopt a system of notification under conditions prescribed by the Local Government Board. Comparatively few local authorities exercised these powers, and the conditions prescribed by the Local Government Board rendered the notification useless for the purpose of statistics. As a result of this failure, Insurance Committees and county councils, who are now charged with the duty of providing treatment for tuberculous persons, are left without even a reasonable guess at the number of tuberculous in their areas. It is unfortunate that just at the moment when the information is most required, the Government declares itself unable to give it. The Local Government Board could, of course, by altering the conditions under which the disease is notifiable in certain areas, render the returns in those areas of some use.

*Royal College of Physicians of Ireland.*

At a meeting of the President and Fellows of the Royal College of Physicians of Ireland held on Feb. 7th, resolutions were carried in silence expressing deep regret at the deaths of Dr. G. A. Gibson, who was so recently admitted an Honorary Fellow of the College, and of Lord Ilkeston, a Licentiate of the College since the year 1860.

*High Death-rate in Belfast.*

At a meeting of the city corporation of Belfast held on Feb. 3rd the report presented, dealing with the health of that city between Dec. 15th and Jan. 18th, showed the extremely high death-rate from all causes of 21·6 and 4.0 from zymotic diseases, and 6·9 from chest affections; in all three particulars a much higher rate than for the corresponding month of last year. Measles and whooping-cough were very largely the cause of the high mortality, as well as pulmonary tuberculosis, pneumonia, and diarrhœa. The number of deaths registered as having been caused by zymotic diseases was 149, those from phthisis 77, those from diseases of the respiratory organs (exclusive of pneumonia) 100, and those from pneumonia 84, making a total of 261 from chest diseases. Disease of almost every kind is prevalent in Belfast at the present time, all the hospitals being crowded, and there is also a widespread epidemic of influenza in the north of Ireland.

Feb. 11th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Treatment of Scoliosis.*

Dr. Lucas-Championnière, president of the Section of Kinesitherapy of the International Congress of Physical Education, to be held next month at the Paris Faculty of Medicine under the presidency of Professor Gilbert, asks all medical men, both French and foreign, especially engaged in treatment by movements, to bring to the Congress all kinematographic photographs or documentary material in their possession bearing on the subject of scoliosis. Many eminent medical men have already consented to take part in this discussion, which promises to be of great interest. Practical demonstrations of methods of physical education will also be given at the Winter Velodrome from March 17th to 19th. Belgians, Danes, Swedes, Italians, representatives from the schools of Joinville and of the Marines of Lorient, as well as a group of women, will demonstrate the best methods of physical education. For information concerning the Congress, application should be made to Dr. Dausset, Associate Secretary-General, Paris.

*Wounds of Arteries by Firearms.*

Two typical examples of vessels wounded by firearms, observed and reported at different periods, were brought before the Society of Surgery on Jan. 22nd by Dr. Rouvillois. In both cases there was little or no primary hæmorrhage, although the wounded vessels were of such magnitude as the femoral and the popliteal. The first case was one of wounded femoral artery, with a recent hæmatoma; the second, an old wound of the popliteal vessels, with complete encysting of the extravasated blood. In the first case blood was extravasated into the tissues around the artery, forming an arterial hæmatoma. On operation a month after the accident, a lateral wound of the terminal part of the femoral artery was found, involving three-fourths of its circumference, with a separation of the edges of the wound to the extent of one centimetre. Ligature, with drainage of the hæmatoma, which contained three-quarters of a litre of clot, resulted in cure. In the second case Dr. Rouvillois had not seen the vascular lesion, not having operated until nearly four months after the traumatism; but it was certain that the artery and vein, which were merely fibrous cords, were obliterated, for arterial pulsation was lacking below the tumour, and the venous reflux from below upwards was not present on the removal of the circular band from the middle of the calf. Ligature and drainage were again followed by cure. This case has a further interest from the coexistence of a lesion of the external popliteal nerve, which had given rise to equinovarus. This was remedied by a further operation. The nerve had not been completely divided, but was probably contused. Dr. Rouvillois considered it best to follow the usual plan in cases where the continuity of the nerve is preserved, and contented himself in the first instance with freeing the nerve trunk and stretching it, without attempting a resection. Owing, however, to the impatience of the patient he found it necessary to resort to a surgical operation on the foot, which proved very satisfactory.

*The Medical Orchestra.*

On Feb. 13th the Medical Orchestra is to give its sixth concert under the direction of M. Busser, with the assistance of many wives and daughters of medical men. The programme includes the *Noces de Figaro* of Mozart, a concerto for the violin, by Mendelssohn, *La Cloche* by Saint-Saens, an impromptu for the harp, by G. Fauré, a suite by Debussy, and a selection from the *Fausts* of Schumann, Schubert, and Berlioz.

*The Sale of Saccharine.*

On Feb. 5th there was opened at Paris the International Conference for the regulation of the use of saccharine and similar substances, in which Germany, Austria-Hungary, Belgium, France, Greece, Holland, Italy, Portugal, Russia, and Switzerland took part. The purpose of this conference was the further discussion of a law that had been formulated by the First International Conference which met in 1909. In view of certain injuries to the public health, noted by experimenters and other observers, as consequent on the employment of saccharine, the participating governments propose to subject the manufacture and distribution of that substance to rigorous control. This is the ostensible reason; but one can hardly help thinking that the fiscal question probably plays the greater rôle, and as this is firmly bound up with the protection of agriculture and the sugar industry, that interest will doubtless form a great factor in any measures proposed by the conference, the president of which was Dr. Bordas, chief of the laboratories of the Ministry of Finance.

*Criminal Abortion.*

Criminal abortion has been the subject of a discussion in the French Senate. M. Paul Strauss, on behalf of the commission appointed to investigate the question, demanded that the entire civilised world must protect itself against the dangers of criminal abortion. He looked more to educational propaganda than to repression to attain that end. He counselled an appeal to the professional conscience of medical men and midwives. M. Strauss further urged the supervision of maternity homes. He asked rather for the better distribution than for the limitation of the number of midwives, and for an ample assistance in maternity. M. Jenouvrier believed that the causes of depopulation were more deeply seated, and did not think that direct legislation would have any practical result. He expressed a desire for increased testamentary freedom, in view of the impossibility of rehabilitating the right of primogeniture. But he relied especially on the moral upbringing of youth. M. Reymond, a medical man as well as a Senator, stated that in his practice, which included obstetrics as well as surgery, there were more abortions to be treated than confinements, and he added that he had heard a woman admit that she had undergone abortion three times in ten months.

*The Effect of Radium on Tumours.*

M. Dominici communicated to the Academy of Medicine on Feb. 4th, in his own name and in those of M. Chéron and M. Rubens-Duval, the results of their investigations into the treatment by radium of tumours of grave

prognosis. The treatment has demonstrated with great regularity the curability of deep angiomas (certain of which were treated in conjunction with Dr. Barbarin), and also the frequent cure of superficial cancer. With regard to deep cancers, radium was used with a purely palliative aim, and its use was in most cases followed by a temporary amelioration. Nevertheless, the result obtained amounted practically to a cure in certain cases of deep cancer of the parotid, the neck, and the uterus, the retrogression of which from the clinical point of view has persisted for three or four years. In spite, however, of the favourable results in some deep malignant tumours, still the authors think that the most advantageous field for the employment of radium is as an accessory to proper operative measures.

Feb. 10th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

### *The Question of Foreign Medical Students in German Universities.*

FOLLOWING the example set by the medical students of Halle, the Berlin medical students recently held a meeting to protest against the overcrowding of the lecture-rooms and clinics by foreign students. Delegates from Halle were present and gave a report of the state of the anti-foreign movement at other universities. The meeting then passed a resolution to the effect that foreign medical students should be allowed to register only a fortnight after the beginning of the lectures, and that the first three rows in every lecture-room should be reserved for German students. Foreign students should not be allowed to act as dressers and clinical clerks unless no German student was applying for the appointments in question; they should pay double fees for the lectures, and be admitted only in a certain proportion to the German students. They must have passed the German examen physicum or a similar one in their native country previously to being admitted to the clinics. These demands are obviously far from being reasonable, and are much more severe than the original demands of the students in the University of Halle, who, as has been mentioned in this column, for a time refused to attend lectures in the end of last year, but returned to their studies after the Christmas holidays. The Government has promised to stop to a certain degree the invasion of foreign students, but will certainly not consent to measures which practically amount to a total exclusion of foreigners.

### *Prussian Schools in Rural Districts.*

At a recent meeting of the Society for School Hygiene Herr Ströde read a paper on schools in rural districts in Prussia regarded from a hygienic point of view. Herr Ströde, who is a teacher in a school of this description, said that remarkable progress had been made in the construction of school premises since 1895, when new regulations were issued, but that the older premises, which were, of course, in the majority, were unsatisfactory. The rooms were cleaned only twice a week, and that by the children themselves. The rooms were often used for public meetings in the evening, so that the next morning the air was foul with tobacco-smoke and dust. The supply of drinking water was also open to objection, as there were sometimes no wells and the water was kept in a bucket placed in the class-room. The drinking glasses were insufficient in number, so that several children had to use the same glass, a condition which was very favourable for the spread of infectious diseases. It was very undesirable that school children should be engaged in agricultural work. Before going to school in the morning they had often to feed the cattle, and after school to drive the cattle to pasture, and must then learn their home lessons lying on the ground. The results of school training under these circumstances were doubtful, especially as the classes were often overcrowded. Herr Ströde strongly recommended the appointment of school medical officers in country places on somewhat the same system as exists in England, the district medical officer of health having already too many duties to be able to supervise school hygiene also. He considered that teachers ought also to have some instruction in hygiene, and to inform the parents when the children's health was unsatisfactory.

### *Dr. Friedmann's Treatment of Tuberculosis.*

As already stated in these columns, the success of Dr. Friedmann's treatment of tuberculosis has been greatly exaggerated in the lay press, especially in foreign countries. The warnings of the medical press, including THE LANCET, have apparently been unheeded. At the beginning of a recent meeting of the Berlin Medical Society Professor Bier made a statement explaining his position in reference to the subject. He said that in consequence of certain foreign newspapers having mentioned his name in connexion with Dr. Friedmann's treatment he was continually receiving letters, especially from America and Spain, inquiring whether the new treatment was really so efficacious as reported in the journals of those countries. Patients also sometimes came from distant places to be under his care while receiving the treatment, because they believed that he was convinced of its advantages. He wished, therefore, to state as his opinion that he had the impression that Dr. Friedmann's remedy had a certain action on tuberculosis, but that it was in no way more efficacious than other methods of treatment. He could as a surgeon only speak of external tuberculosis, but he mentioned that Dr. Friedmann had declined to treat severe cases which afterwards showed some improvement under other methods. He regarded it as very undesirable that a system of treatment which was not yet sufficiently tested, and had hitherto been only used by Dr. Friedmann himself, should be lauded in the foreign press as affording a sovereign remedy. If the remedy should eventually turn out to be inefficacious much harm would be done to German medical science and to the Berlin Medical Society by the publishing of uncontradicted statements asserting that the members of the society had expressed themselves in favour of the remedy. He hoped the journals which had reported that he had recommended Dr. Friedmann's treatment would also insert his present statement. One result of the publicity given to Dr Friedmann's views has been that the Socialist section of the Berlin town council moved that the mayor and magistrates should take steps to prevent patients in municipal hospitals and inmates of orphanages from being used for therapeutical experiments unless under the special responsibility of the chief physician and with the consent of the patients or their guardians. The supporters of the motion, which after some discussion was, however, withdrawn, took this action in consequence of a statement to the effect that Dr. Friedmann had given injections of living tubercle bacilli to children in one of the municipal orphan asylums.

### *Migratory Impulse in Children.*

Some interesting facts connected with the migratory impulse in children were mentioned by Dr. Stier in a paper read at a recent meeting of the Society for Internal Medicine. He said that during the past three years he had seen no fewer than 120 children brought to the out-patients' department of the Charité Hospital because they had repeatedly run away from home. The motive which led them to behave in this way was, of course, not always the outcome of a morbid condition, and was frequently nothing more than a spirit of adventure. Whether a given case was a pathological one or not could be ascertained only by the history of the child and the circumstances surrounding the act. It was quite useless to ask the children as to their motives. Some writers on the subject alleged that epilepsy was frequently the cause of children running away from home, but in actual fact this condition was seldom found among them. In two cases only a post-epileptic feebleness of mind was present; seven other children had had epileptic fits but a connexion between the fits and the migratory impulse was very uncertain. Hysteria was also rare among the children. The majority belonged to the feeble-minded and psychopathic class. Some of them had been so much impressed by some event in the street, such as a procession or a military band passing along, that they simply forgot to return home, and under these circumstances might absent themselves for a considerable time. Some were very irritable, and in consequence of depressing conditions at home or in school were brought to a state of frenzy which prompted them to run away. Another group were labouring under hallucinations and delusions of fear. Ethical defects were present in a certain number, and it was sometimes difficult to determine whether these children were psychopathic

or only the victims of neglect. In some the inclination to run away was caused by an irresistible impulse without any obvious cause. Dr. Stier said that he had seen two cases in which the impulse was hereditary through three generations, occurring always at the age of 12 years. The prognosis was not unfavourable provided the children were under constant control in an institution of some kind.

*A Carrier of Enteric Fever Bacilli.*

In an outbreak of enteric fever which recently occurred in the barracks of the regiment of railway pioneers in Hanau, near Frankfort, some of the men at first presented symptoms of bronchitis and atypical fever, but after a few days suffered from diarrhœa, and bacteriological examination showed the presence of enteric fever bacilli. The disease spread rapidly over the whole barracks. The cause of the epidemic was after careful inquiry traced to a woman employed in the kitchen; she had suffered from enteric fever a few years ago, and was now found to be still carrying the bacilli of that disease. It was ascertained that the infection had been conveyed by potato salad which she had prepared, and she was of course removed from the barracks. The total number of patients infected from this source was 226, of whom 14 died.

Feb. 10th.

## UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

*Committees on Rural and Urban Sanitation.*

THE attention of the people, both professional and lay, of the United States, and particularly of New York State and City, is being directed to hygienic and sanitary matters very much of late, partly through the medium of the medical and secular press. Committees have been appointed by the new Governor of the State to study the question of rural and urban sanitation, who are expected as a result of their investigations to formulate ways and means to remedy existing evils.

*The Port of New York.*

The attitude of Dr. O'Connell, the port medical officer, in declaring for a continuance of State control of the port of New York rather than for its transference to Federal authorities, is greatly to be regretted. Statistics disclose the great importance of New York as the principal port of entry for imports and immigration not only to the City and State of New York, but to the country at large. Federal control of quarantine has justified itself more and more whenever it has been tried, while local management has miserably failed in many ports because of local prejudices, notably San Francisco during the plague fright some years since.

*Proposed Sanitary Regulation of Marriage.*

A New York State Senator has introduced a Bill providing that on application for a licence to marry each party to the contract must present a certificate from a licensed practitioner showing freedom from disease due to immorality. This measure has in principle been advocated by medical associations, but it is hardly specific enough to have the desired preventive effect. No such legislation is really likely to be of practical good yet, but this measure, to be logical, should be made broader by excluding also conditions incompatible with the best results of matrimonial alliances. Also recourse should be had to local boards of health so as to relieve the family physician, who would naturally be the one called upon, of the temptation to protect the family, and also would prevent hasty approvals without careful examination into the history, and allow of an examination by those less likely to be influenced by association or otherwise.

*The Society of Medical Economics.*

A new society of medical men called The American Society of Medical Economics has been established to devote its attention to questions bearing upon the economics of the practice of medicine. It will seek to protect the public against ignorant, improper, and corrupt legislation, medical frauds, substitution, drug store dispensing, the sale of impure drugs and foods, as well as all forms of quackery.

*Restriction of the Sale of Cocaine in New York.*

A new Bill is to be presented to the New York Legislature making the sale or possession of cocaine by an unlicensed person in New York City a felony, punishable by seven years' imprisonment. The Bill provides that the possession of cocaine by a licensed pharmacist shall be limited to 5 ounces at any one time; that the chemist shall not sell the drug in flakes or crystals, but must dispose of it in a solution or ointment of not more than 4 per cent., and keep a record of all sales; that prescriptions containing cocaine shall not be refilled; and that no sale of more than 1 ounce shall be made to any one person by the pharmacist.

*A Filthy Practice.*

The Buffalo (New York) Health Department has been making investigations concerning the condition of finger bowls in public hotels and restaurants. Brass finger bowls are declared unsanitary, and the assertion has been made that they spread disease because of the difficulty of properly cleansing them thoroughly. In public eating-places it has been noticed that waiters are prone to offer a bowl containing water that has been previously used. As many persons wash their lips, as well as fingers, in such bowls, the danger is obvious. It needs also to be insisted on in public eating-places that waiters shall not be allowed to sneeze in such places without protecting their nose and mouth with their handkerchiefs, instead of with the napkins which they are continually using.

*Society for the Advancement of Clinical Study.*

There has recently been organised in New York City the Society for the Advancement of Clinical Study, which will maintain a bureau of information where resident and visiting physicians can obtain definite information regarding the clinical facilities of the hospitals and laboratories of the city. A bulletin board has been installed at the Academy of Medicine, 19, West Forty-third-street, with a special clerk on duty between 9 A.M. and 6 P.M. to answer telephone inquiries. On the bulletin board will be posted month by month the regular clinics, medical and surgical, and also laboratory demonstrations, all of which are held at stated hours. Full announcements of daily operations and demonstrations of cases both medical and surgical will, as far as possible, be made on the day preceding their performance. Visiting medical men interested in observing particular operations or the work of particular operators or physicians will thus attain their object with the least trouble. It is hoped that the unexcelled clinical facilities of New York City will thus be made more generally accessible.

*The New York Neurological Society.*

The following officers have been elected to serve for the year 1913:—President: Dr. Smith Ely Jelliffe. First Vice-President: Dr. E. G. Zabriskie. Second Vice-President: Dr. E. W. Scripture. Corresponding Secretary: Dr. J. Ramsey Hunt. Recording Secretary: Dr. C. E. Atwood.

Feb. 1st.

HARVEIAN SOCIETY OF LONDON.—On Thursday, Feb. 20th, at Stafford Rooms, Titchborne-street, Edgware-road, W., there will be a discussion on the Diagnosis of Acute Abdominal Conditions in Children, opened by Mr. E. M. Corner and Dr. E. Cautley, and continued by Sir James Goodhart, Mr. V. Warren Low, Dr. G. F. Still, and others.

THE ASSOCIATION OF CERTIFIED DISPENSERS.—The annual meeting of this association was held in the Court Room of the Apothecaries' Hall, Blackfriars, E.C., on Feb. 6th, Mr. Montagu G. Smith, of the Lewisham Infirmary, presiding. The balance-sheet and annual report showed satisfactory progress, but Mr. A. Howell, who presented the report, stated that the proposed Bill on behalf of dispensers still waited a suitable opportunity to be put before Parliament. Mr. Howell then gave in his resignation of the post of honorary secretary, which was accepted with regret, and on behalf of the members was presented with a gold watch by the chairman, who in a reminiscent speech alluded to the success of the association as the result of Mr. Howell's untiring efforts. Mr. A. Mowbray Upton, clerk to the Society of Apothecaries, spoke to the same effect. The committee for 1913 was then elected. Mr. Montagu Smith and Mr. A. L. Anderson were unanimously re-elected chairman and treasurer respectively. Mr. F. E. Trayner, of Hackney Infirmary, Homerton, N.E., was appointed honorary secretary, to whom all communications should be addressed at 13, Carlton-road, Manor Park, E.

# Obituary.

## HENRY EALES, M.R.C.S. ENG.,

SENIOR SURGEON TO THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

WE regret to learn the death of Mr. Henry Eales, which occurred after a short illness on Feb. 8th at 3, Queen's Court, Hagley-road, Edgbaston. The son of the vicar of Yealmpton in Devonshire, Henry Eales was born at Newton Abbot in 1852, and began his medical career, as was customary in those days, by being apprenticed to the village doctor. During his apprenticeship there was a local epidemic of scarlet fever, and having to examine the urine of many patients for albuminuria, out of curiosity he examined his own and found that it contained a large amount of albumin. As he had not had fever it is probable that it was merely the albuminuria of adolescence, but little was known on this subject at that time, and so serious was the view taken of his condition that for about a year he was not allowed to continue his medical work. But later, as his general health remained good, he was permitted to proceed with his career, and entered as a student at University College, London, where he gained two silver medals in anatomy and one in materia medica. He took the Membership of the Royal College of Surgeons of England in 1873, and went to Birmingham as house surgeon to the Birmingham and Midland Eye Hospital. At the termination of this appointment he became demonstrator of anatomy and medical tutor at Queen's College, but a vacancy occurring on the staff of the Eye Hospital in 1878 he was elected one of its honorary surgeons. He served the charity, therefore, for 35 years, for several of which he was senior surgeon, while he was also ophthalmic surgeon to the Guest Hospital, Dudley, to the Hammerwich Hospital, Cannock, to the Balsall Heath Dispensary, to the Edgbaston Royal Deaf and Dumb Institution, and medical referee for ophthalmic cases under the Workmen's Compensation Act. At the annual meeting of the British Medical Association in Birmingham in 1911 he presided over the Section of Ophthalmology. He held office as vice-president of the Ophthalmological Society, as chairman of the Pathological Section of the Birmingham branch of the British Medical Association, as president of the Midland Medical Society, and treasurer of the Birmingham and Midland Counties Ophthalmological Society. He delivered the Middlemore lecture for 1897. At one time he contributed a good many papers to the medical journals, including a Report on the State of the Retina in a Hundred Cases of Granular Kidney (*Birmingham Medical Review*, 1880), Uni-Ocular Retinitis Albuminurica, and Toxic Amblyopia (Transactions of the Ophthalmological Society). He was particularly skilful in the use of the ophthalmoscope, his opinion of the appearances being of the utmost value to those who sought his advice in doubtful cases. As a result of wide knowledge and technical skill he built up a large consulting practice, and his death will come as a painful surprise to a wide circle of practitioners and patients who relied upon his counsels.

The albuminuria which had shown itself during his apprenticeship entirely disappeared by the time he went to Birmingham, but he suffered at one time severely from migraine, which became less frequent during recent years. Last Christmas most of his family were ill with influenza, but he appeared to escape; soon afterwards, however, he developed a slight attack of phlebitis in the calf of the left leg. This seemed to get better, but the pain and swelling returned in about ten days, so that he was obliged to stay in bed. On Feb. 5th he had an attack of vomiting with syncope, and this was followed by a rise of evening temperature. These symptoms were gradually improving, and on the morning of the day he died he looked and expressed himself as feeling decidedly better; but a few hours later he died in another attack of syncope. He leaves a widow, two sons, and two daughters; the elder son is senior curate at Kenilworth, while the younger is the resident surgical officer at the Eye Hospital.

Henry Eales was a man of singularly amiable character, and his death makes a gap which to his older colleagues can never be filled. They were sincerely attached to him for his unfailing kindness of disposition, his high character, and thorough loyalty and devotion to his work.

## LEONARD NOON, M.B., B.C. CANTAB., F.R.C.S. ENG.

WE regret to record the death of this brilliant young medical man, which occurred, at the age of 35, on Jan. 20th, after two years of illness. Leonard Noon was educated at Charterhouse and Trinity College, Cambridge, studying medicine at that University, at St. Bartholomew's Hospital, and at the Pasteur Institute, Paris. In succession he was the John Lucas Walker student at Cambridge, house surgeon at St. Bartholomew's Hospital, research student in bacteriology at the Lister Institute, and assistant and research worker at the Inoculation Department of St. Mary's Hospital.

After leaving St. Bartholomew's Hospital Noon was engaged almost exclusively in investigating questions of immunity, his work being of a general theoretical nature rather than leading to a direct practical application. This work included investigations into the nature of the toxins and antitoxins of tetanus, the mechanism and localisation of the production of antibodies, the significance and reliability of serum reactions, and similar researches, papers on these subjects appearing in THE LANCET, in the *Journal of Pathology and Bacteriology*, and in the *Journal of Hygiene*. A research which he developed to a practical application was an offshoot from such work as this—namely, the active immunisation against hay fever by means of inoculating extracts of pollen. A paper describing the prophylactic and therapeutic application of this work appeared in THE LANCET on June 10th, 1911, and experience since then has undoubtedly demonstrated the accuracy of his work and its promise for good in the treatment for hay fever.

In private life his interest in volunteering and rifle-shooting dated from his presence for two successive years in the winning public schools team at Bisley for the Ashburton Shield, and this interest he maintained through life. In addition to this, mountain climbing fascinated him, as it often does the strongly intellectual mind. He had not an enemy in the world, and the turn of mind which made him both a wit and an investigator gave him a host of friends and an interest in almost any subject. In fact, Noon was one of those few who really are designed by nature for research work. He had a mind extraordinarily fertile in bold generalisations and new conceptions, and yet he was very ready and ingenious in destructive criticism. He was not, perhaps, very well known to the general profession, for he regarded private practice as interesting indeed on its personal side, but rather an interruption to research; but, as those who were connected with him in laboratory work well know, his early death has deprived English medicine of a powerful brain and of valuable help in the future.

## JOSEPH BAYLEY, M.R.C.S. ENG., L.S.A.,

MEDICAL SUPERINTENDENT OF ST. ANDREW'S HOSPITAL, NORTHAMPTON.

Mr. Joseph Bayley, for many years medical superintendent of St. Andrew's Hospital for Mental Diseases, Northampton, whose death at Bryn-y-Neuadd, Llanfairfechan, after 11 weeks' illness we announced in our issue of Jan. 25th, was one of the most highly respected residents of Northampton, a man of conspicuous ability in his profession, and an exceptionally successful organiser. His life work was bound up with the institution with which he was so honourably associated for 48 years.

He was born in January, 1836, and was the son of Dr. Joseph Bayley, of Odiham, Hampshire. He was educated at Reading School, and proceeded to King's College, London, where he completed his education and duly qualified. He entered the Royal Navy as a surgeon, and on the outbreak of the Crimean war served with the Baltic Fleet on board H.M.S. *Colossus*, one of the first-class line of battleships, and was present at the bombardment of Bomarsund and at Kronstadt. For his services he received the Baltic medal. At the conclusion of hostilities he was appointed surgeon on H.M.S. *Shannon*, a vessel of the frigate order. He did not continue long in the navy, but resigned his commission to enter the lunacy service, in which he remained until the end, and to which he made important contributions of a reformative character.

Mr. Bayley's first appointment in his new sphere was that of assistant medical officer at Leicester County Asylum. He afterwards became assistant medical officer at the Salop and Montgomery Asylum, Shrewsbury, under Dr. Oliver, whose daughter he married. On the death of Dr. Oliver he was

appointed superintendent of the Shrewsbury Asylum, and in 1865 he was appointed medical superintendent at St. Andrew's Hospital, Northampton. Here for nearly 50 years he devoted himself to the welfare of the institution, which under his skilful administration became one of the leading asylums of its kind in the country. In the management of the hospital itself, no less than in the treatment of patients, he was most successful, and St. Andrew's became recognised as one of the largest and best places for the treatment of patients of the upper and middle classes. When he went to Northampton an average of 20 private patients were admitted during the year; nearly 100 are now admitted, and the total number of inmates is about 450. In 1865 the asylum possessed about 100 acres of land; it now owns, including the Welsh estates, over 1000 acres, while the buildings have been repeatedly enlarged and remodelled, so that the hospital now possesses hardly a feature in common with the institution of half a century ago. In the care of the patients Mr. Bayley always laid special emphasis on the importance of pleasant surroundings and recreations, and his interests, apart from athletics and sport, were mostly confined to the development of the hospital and its estate. His work proves him to have been a shrewd, capable, far-seeing man, of large organising power and practical enterprise. Clear of perception and of ready decision, he may have seemed sometimes a little quick-tempered, but at heart he was kind and considerate.

An old friend and professional colleague writes: "Now that his lamented death has terminated a long and much valued friendship, I cannot refrain from giving expression to the feelings of admiration which I have always entertained for his attainments as a physician and his skill in that branch of the profession which he had adopted and for so long practised. In the ranks of the alienists Mr. Bayley's death creates a loss which it will be difficult to fill, for it was to the position he occupied and which was so widely recognised that the success of St. Andrew's as a hospital for the care and treatment of the mentally afflicted was due. St. Andrew's before his time was a struggling institution with scarcely any but local connexion. Patients from all parts of the kingdom, of all degrees, are now sent—a tribute, indeed, to the skill of the superintendent and to the widespread nature of his reputation. It has happily been Mr. Bayley's lot to complete the work to which he had devoted his lifetime."

---

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Reyter, a Belgian military surgeon, who after serving for some years in the Congo, was appointed physician to the King of Siam, Chulalong-Korn, and continued to act in the same capacity to his successor. He was ennobled with the title of "Phya Prasert Satra Damrong," which is understood to be the equivalent of "marquess."—Kristian Thue, formerly senior medical officer of the Christiania communal infirmaries and of the deaconesses' home. In early professional life he had been assistant in the Pathological Institute.—Dr. A. Viaud-Grandmarais, formerly professor of medical pathology in the medical school of Nantes.—Dr. Paulin-Méry, formerly a deputy for Paris.—Dr. W. Mitlacher, extraordinary professor of pharmacology in Vienna.—Dr. Philipp Steffan, formerly eminent as an ophthalmologist, though retired for some years. His age was 74.—Dr. Bellisari, *privat-docent* of neurology in the University of Naples.—Dr. A. Panella, *privat-docent* of physiology in the University of Pisa.

---

ROYAL UNITED HOSPITAL, BATH.—The annual meeting of the subscribers to the Royal United Hospital was held on Jan. 29th under the presidency of the mayor. The medical report was satisfactory, and the financial statement showed a deficiency of £1982 at the close of 1912. The proceeds of the special fund raised by Mr. A. S. Wills, to which the late Mr. Overton Wills contributed £500, have been used for carrying out several improvements in the hospital, including the installation of an electric lift. The chairman referred to the small contributions received from churches and chapels, and suggested the adoption of the custom, observed in Bristol, of having a special Hospital Sunday.

# THE NATIONAL INSURANCE ACT.

## THE WORKING OF THE ACT.

ALTHOUGH it is still too soon to give any definite opinion upon the working of the National Insurance Act, the numerous questions which have been raised in the House of Commons and reported in our Parliamentary Intelligence indicate that difficulties of every kind are being experienced by many of those engaged in administering or providing medical benefit. After making due allowance for the political motive behind some of the questions asked in Parliament, the feeling remains that the Government's answers have been at least as ingenious as satisfactory. The replies given by Ministers or their responsible supporters have so far thrown little light upon the practical problems of medical benefit, although it is obvious that great efforts are being made to provide the insured with a satisfactory medical service of the kind which the Government desires. The official suggestion, however, is that everything is already going on smoothly and satisfactorily, or in the alternative, that all would be well if it were not for the unreasonable opposition of a section of the medical profession. The matter can scarcely be left at that; the position is too serious. So far as information is at present available, the medical machinery of the Act seems to be working adequately in some districts, but there are undoubted grounds for the irritation which is felt by so many practitioners. This irritation, although widespread, is due to different causes in different localities, and it is the duty of those responsible for the administration of the Act to group the various causes together and prescribe remedies which can be applied on a large scale. The present impression is that the Act cannot escape amendment, but the exact lines which such alteration should follow have yet to be defined.

---

## THE LONDON INSURANCE COMMITTEE.

We have received the following election address from Mr. E. B. Turner and Mr. Evan Jones:—

"Having been requested by a large number of practitioners to stand for election as representatives of the medical profession on the London Insurance Committee we have consented to do so, and ask for your votes and support for the following reasons. We hold (1) that the two practitioners elected by the profession to serve on the Insurance Committee for the London area should be entirely independent of the control of that committee; (2) that the interests of the very large number of men who have declined to serve under the Insurance Act and Regulations should be safeguarded as far as possible on that committee by the directly elected representatives. The six other medical men nominated and appointed by the Commissioners and the County Council respectively will amply suffice to voice the wishes of those gentlemen who are now serving on the panels, but it is extremely unlikely that they will give any very active support to those who have declined to work under the Act. If elected we shall consider that we represent the whole of the profession in London, and shall do our utmost to further the interests of every member of that profession whether he be working under the Insurance Act or not.

(Signed) EVAN JONES.
E. B. TURNER."

---

## THE CASE OF THE DEPENDENTS.

An interesting situation has arisen in Monmouthshire between the Eastern Valleys Medical Association and the workmen in the district with regard to the terms upon which medical attendance should be rendered to the families and dependents of insured persons. Previous to the National Insurance Act the position in this district had been that the medical officers of the collieries received 3*d.* in the £ of all wages earned by the collier, and in return for that sum attended both him and his dependents. With the arrival of the National Insurance Act the collier himself fell under the provisions for medical attendance, so far as these go. The medical men then decided that they would continue to attend the dependents for 2*d.* in the £ for wages earned. There had been originally a suggestion that the sum should be 2½*d.*, inasmuch as it was, and is, expected that in some directions

there may be an increase of work for the medical practitioners as well as a slight diminution of returns. Now, however, the medical practitioners have agreed upon the smaller sum. But recently they have been asked to meet the Monmouthshire Insurance Medical Committee, which, despite its title, is a lay body, being a subcommittee of the Monmouthshire Insurance Committee for the purpose of medical organisation, when the following terms were submitted to them:—

1. That each person agree to pay 2*d.* in the £ of all wages earned.
2. That such person be allowed a free choice of doctor.
3. For the above payments the doctor to provide medical attendance, including drugs, &c., as has been the custom hitherto, also medical certificates.
4. The medical attendance to include abortions and midwifery.
5. That the doctors agree for the money deducted from the wages of the workmen to be transferred to a committee to be appointed at each colliery, works, or factory.
6. That these terms and conditions be operative until June 30th.

Now to Clause 4 the medical profession forming the Eastern Valleys Medical Association object strongly, while they refuse to be impressed by the fact that in other districts certain practitioners have consented to the principle of free midwifery, as it is known that this concession was only granted under a misapprehension. We understand that temporarily the medical men will give their service in obstetric cases where required, but after June 30th they intend to charge an extra fee of 10*s.* 6*d.* for abortions and midwifery, though they will continue to attend, as before, emergency cases of midwifery gratuitously.

To Clause 5 also the medical men object strongly, and the principle that they stand for—viz., that the money which they have already earned should continue to come straight from the works and not through the hands of any committee—seems to us unassailable by logic. The money has already been earned by the medical men at the time when the wages are due. Why should it not be paid straight to them if they so desire it? Why should it be lodged first with any committee of the workmen? The workmen can only desire to obtain control over the money which the medical profession has already earned so as to obtain some kind of undue influence. No safeguard against medical aggression can possibly be necessary, as the community has complete freedom of choice of doctor; and in no event can it be a respectable proceeding to retain money which has been earned in order to secure power over those who have earned it. We cordially recommend the Eastern Valleys Medical Association to maintain their point.

We may add that the matter has nothing to do with the National Insurance Act in its present form, although it is convenient to refer to it under this heading. The position of the Monmouthshire Insurance Medical Committee in the matter is a little difficult to understand; the question is one to be settled by the workmen and the medical profession, and has to do with services to be rendered outside of the scope of the Act.

# Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. Wossidlo, an eminent urologist; Dr. Theodor Landau, a sanitary councillor of gynæcological eminence; and Dr. Otto Kalischer, whose researches on anatomical and physiological questions have long been recognised as valuable contributions to our knowledge, have been granted the title of Professor.—*Bonn:* The dissertation for the M.D. degree may now be presented in German.—*Carlsruhe:* Dr. v. Beck, chief surgeon to the municipal hospital, has been granted the title of Professor.—*Catania:* Dr. Ignazio Beltiore, of Naples, has been recognised as *privat-docent* of Clinical Chemistry.—*Leipsic:* Dr. K. Sudhoff, extraordinary professor of the history of medicine, has been promoted to Honorary Ordinary Professor.—*Montpellier:* Dr. Grasset, professor of clinical medicine, has been appointed to the chair of General Pathology and Therapeutics, in succession to Dr. Rauzier, who has taken Dr. Grasset's chair.—*Munich:* Dr. Georg Mayer, *docent* of hygiene in the military medical school, has been promoted to Professor.—*Wiesbaden:* Dr. Nikolaus Gierlich has been granted the title of Professor.—*Würzburg:* Dr. Martin Benno Schmidt, of Marburg, has been offered the chair of Pathological Anatomy in succession to Dr. Kretz, who is retiring. Dr. J. Riedinger has been recognised as *privat-docent* of Orthopædic Surgery and Mechanical Therapeutics.

THE ALBERT MEDAL FOR A WILTSHIRE NURSE.—The King has awarded the Albert Medal of the Second Class to Miss Elizabeth Holley, of Kingsdown House, Box, in recognition of her gallantry in endeavouring, at great risk to her own life, to save the life of a patient who suffered from suicidal tendencies, and who, while under the charge of Miss Holley, was killed by a train at Box station in November last.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY: THE ANNUAL DINNER.—The annual dinner of the West London Medico-Chirurgical Society was held on Feb. 6th, at the Hotel Great Central, Dr. G. P. Shuter, the President, being in the chair. Mr. Richard Lake, in proposing the toast of "The Imperial Forces," spoke in favour of universal military service, which our more democratic colonies, Australia and even South Africa, had adopted. He commented on the inconsistency of the Socialist Party, which vehemently opposed it, whereas military service, like every other public service, ought logically to form part of their programme. Sir W. Launcelot Gubbins, Director-General A.M.S., in responding, gave a historical retrospect of the political events of 1813. Coming to present times, he praised the newly organised colonial forces for Imperial defence. As evidence of naval progress, he pointed to the new battleships provided by New Zealand and the Federated Malay States, and to the £7,000,000 for naval purposes recently voted by the Canadian Government. The medical branch of the army, he said, was now getting on very well—so well, indeed, that when posts were vacant under the Foreign Office or the Colonial Office, it had become usual to apply to the Royal Army Medical Corps for men to fill them. Army medical officers were acting as governors of provinces; they had been lent for administrative posts to the Red Cross in the Balkan States during the present war, and a bacteriologist had even been sent to Turkey, where he had had a very hard job. Of the Balkan Medical Services, the Servian was the best. He had nothing but good to say of the medical service of the Territorial Forces. If the rest of the Territorial Force were in as satisfactory a condition as its medical service there would be little to complain of. He also eulogised the organisation of the St. John Ambulance Association, which had been a revelation at the review in London last year, and was really a most valuable asset. The President, in proposing the toast of "The West London Medico-Chirurgical Society," said the membership was at present well maintained, as they had over 580 members, of whom 33 were original members. The attendance at meetings during the past year averaged 44, and at the Cavendish lectures never less than 100. He prophesied a distinguished gathering for Sir Berkeley Moynihan's lecture next June, and paid a tribute to the society's losses by the deaths of Lord Lister, Sir Henry Butlin, and Mr. Leonard Bidwell. But he expressed his belief that the society would be adversely affected by the Insurance Act. The profession would be split, as it had been in Germany, according to a conversation he had had with a well-known sociological authority, into two classes of practitioners—insurance doctors and independent doctors, the latter few but respected, consulted and looked up to, the former numerous, but having no standing. In Germany the insurance doctor now ranked below the village parson and the village grocer. The Act was already beginning to affect medical education adversely. The entries at the medical schools had enormously diminished, and unless steps were taken to raise the status of the profession the Government would have either to lower the educational standard or to subsidise the students; in either event the result would be an inferior class of men in the profession, who would have no use for such a society as the West London Medico-Chirurgical Society. Dr. S. D. Clippingdale, in replying, gave some reminiscences of the society, and stated that its financial condition was good. Dr. F. S. Palmer proposed the toast of "The Kindred Societies and Guests," and Sir Francis Champneys, President of the Royal Society of Medicine, replied. Mr. W. McAdam Eccles proposed the health of the chairman, who briefly responded. The entertainment, which consisted of Punch and Judy up to date by Mr. Carl

Harmon and some drawing-room magic by Mr. Herbert Collings, whose patter was humorously apt for the occasion, was very greatly enjoyed.

THE BRISTOL MEDICAL CHARITIES.—During 1912 the employees of Messrs. J. S. Fry and Sons collected £590 for the Bristol medical charities.

A CORNISH CENTENARIAN.—The Rev. P. Carlyon, of Pennance House, Falmouth, has recently entered upon his 102nd year. The *Guardian* believes that Mr. Carlyon is the oldest clergyman in England.

OCKENDEN (TORQUAY) CONVALESCENT HOME.—During 1912 the patients admitted to this home numbered 204, and the average number of occupied beds was 19·8. At the close of the year a favourable balance of £42 remained.

UNIVERSITY OF BIRMINGHAM.—Mr. Gilbert Barling, surgeon to the Birmingham General Hospital, professor of surgery in the University, and formerly Dean of the Faculty of Medicine, has been elected Vice-Chancellor.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, LONDON.—The secretary informs us that out-patients' days are now Monday, Tuesday, *Thursday*, and Friday. The change is that Thursday has taken the place of Wednesday, and this was made at the beginning of the year, but a number of new cases still go to the hospital (often from country places) on Wednesdays.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly meeting of this association will, by the courtesy of Dr. Rotherham, be held at the Darenth Industrial Colony, Dartford, Kent, on Thursday, Feb. 20th, under the presidency of Dr. J. G. Soutar. Trains leave Charing Cross at 9.55 A.M., or Cannon-street at 9.42 A.M., for Dartford. The following papers will be read after luncheon: Assistant Medical Officers in Asylums, by Dr. J. Beveridge Spence; and A Brief Account of Darenth and its System of Industrial Training, by Dr. A. O. Spensley. Members will subsequently dine together at 6.45 P.M. for 7 o'clock, at the Café Monico, London, when morning dress will be worn.

WEST SUSSEX COUNTY COUNCIL: MEDICAL AND SANITARY DUTIES.—At the West Sussex county council meeting at Chichester on Feb. 7th the resignation of the county medical officer of health, Dr. A. G. R. Cameron, was accepted, to take effect from June 30th next. It was stated at the request of Dr. Cameron that the Insurance Act having come into operation since his appointment, and as he had not, he felt, received the support of the committee in carrying out the schemes he suggested, it would be better for him to resign his office. The council resolved that a conference should be held between the various medical and sanitary authorities as to the effective and economical methods of carrying out the medical and sanitary duties in the county, avoiding any overlapping. The position at present is that the West Sussex county council has a medical officer, two assistants, and two school medical officers under a chief, and a tuberculosis officer must be appointed. The conference is to be called together at an early date.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*The Insurance Act in Operation.*

ON Friday, Feb. 7th, the House of Commons had an opportunity of discussing in Committee of Supply various topics which have arisen in connexion with the administration of the Insurance Act. The debate took place on a vote of £1,825,000 for the expenses of the National Insurance Commission. The larger proportion of this money, as explained in THE LANCET of last week, is required to bring the payments of medical men who have accepted service on the panels up to the amount promised by the Chancellor of the Exchequer last year. Naturally the most interesting speech was that in which Mr. LLOYD GEORGE dealt with points of criticism, as he was speaking as the Minister who was primarily responsible to Parliament for the financial arrangements. But the speeches of Mr. WORTHINGTON EVANS, Dr. ADDISON, Sir PHILIP MAGNUS, and Mr. H. W. FORSTER, who spoke from other standpoints, gave expression to views which will be read with interest by medical men. At times a keen controversial element was introduced into the debate.

A point which concerned Parliamentary financial procedure at first occupied the attention of the House. Some Members protested against the proposal to extend the grant into the next financial year, as this was a departure from the practice to grant Supply only for the current services of the year. Mr. CASSEL urged that the arrangements with medical men were provisional for the first three months of the year. In voting money which would be expended in the new financial year which began in April the House would not retain control over the new arrangements. Mr. MASTERMAN, the secretary to the Treasury, insisted that the Act contemplated placing the money for the full medical benefit for a year at the disposal of the Insurance Committees in order that they might make contracts with medical men for a year. The House accepted the view of the Government.

*The Free Choice of Doctors.*

Mr. WORTHINGTON EVANS, who has taken a leading part amongst the members of the Opposition in regard to the Insurance Act, was the first speaker who criticised the administration of the statute. He contended that the "free choice of doctors" had been interfered with by the authorities responsible for carrying out the Act, and that private arrangements for medical treatment had been denied to insured persons. He took exception to the "threats" to send medical men to districts where the local practitioners declined to form a panel, and impose them on insured persons. Such threats, he said, had poisoned the whole administration of the Act, and had affected the administration of every Insurance Committee. He maintained that if a panel was once formed in a district upon which medical men were serving the Insurance Commissioners could not close it so as to prevent other practitioners joining it.

Mr. MASTERMAN intervened to say that if the list was adequate to the needs of the neighbourhood it was acted on. If it was inadequate the Commissioners might declare it inadequate and might bring in any other system which they pleased, including what was called the "closed panel system."

*The Agitation in London.*

Dr. ADDISON, in the course of a long speech, declared that the whole intent and purpose of the medical agitation in London was to break down the Insurance Act. Those concerned in it wanted to persuade the insured persons to make their own arrangements without explaining to them what was the project in which they would be involved. He criticised at length the form supplied by the London Medical Committee. The hotheads, he said, who had got control of the agitation to the detriment of their professional brethren by ignoring the interests of the insured persons, had put every public authority in the country against them. He condemned attempts that had been made to prevent medical men coming on the panel.

Sir PHILIP MAGNUS said that the House should remember that the Member for Hoxton (Dr. ADDISON), although he was a medical man, did not speak in the name of the medical profession, which would repudiate much that he had said. He also complained that every possible difficulty had been placed in the way of insured persons making their own arrangements for medical treatment, and that medical men had been overworked under the Act.

*The Chancellor of the Exchequer's Reply.*

Mr. LLOYD GEORGE, in the course of his reply, said that the Insurance Act had brought into prominence the fact that the poorer districts were often largely understaffed with medical men. In well-to-do districts and suburbs and amongst industrial populations earning good salaries there was a doctor for 500 or 1000 of the population. In Bradford he thought there was a medical man for every 1200 or 1300 people. But in the East-end there was only one doctor for every 4000 or 5000 of the population. One result of the Insurance Act was that well-qualified medical men were beginning to drift to these districts for the first time. It was true that many of them were young men who saw an opening, but why did those men not start in these districts before? It was because they could not make a living unless they adopted a type of practice where they had thousands of patients with a threepenny fee and a bottle of medicine thrown in. Now the well-to-do artisan and the man who was only earning 10*s.* or 15*s.* a week were both getting the same payment from the Insurance Fund for their doctor. What was the result? The medical man in future, although he might dislike the poor neighbourhood, would find that from the point of view of payment there was no distinction between the well-to-do district and the district which was not well-to-do. The doctors were beginning to find that out. The system had only been in operation for three weeks, and an honourable gentleman had complained that things were not in perfect order. No proof had been given by him of that. It depended upon a sort of gassy invective that had appeared in just one or two newspapers, but not in all. Who was responsible? Up to Dec. 21st the doctors did not come in under the Act. On that date, within about a fortnight or three weeks of the Act coming into operation for medical benefits, they started, not an absolutely new scheme, but a scheme which they themselves had rejected 18 months before, and as to which they demanded unanimously that the House of Commons should make a statutory provision to prevent it ever coming into operation. Why should the

Government be blamed for that? This wild-cat scheme had been projected at the instance of one or two men who had led the profession very badly. He thought that all the doctors of the country admitted that quite freely now. That was the real reason why, if there was the slightest confusion, it existed. It was because the doctors refused up to the last moment to accept the terms offered, and put forward terms which they unanimously had rejected 18 months before, and as to which they wished the Government to provide a statutory bar against their ever coming into operation.

*The Question of Over-work.*

Now as to the question of over-work. There was no proof of that. The only proof that had been put forward was the mention of a certain doctor who had got thousands of patients who insisted on going to him, and they would insist for some time on going to him. It was impossible to prevent them. The honourable Member for London University gave the case of a doctor who dropped dead in the street and there was an inquest and evidence that it was all due to overwork. The whole number of persons—not patients—on his list was 137. The cards had come in since his death, and therefore the Insurance Commissioners knew the facts. Four or five days before his death they were 96 and at the time of his death they were 137. He learned that in London there were nearly 1200 doctors already on the panels, and the number of insured persons was 1,300,000. That meant there was on an average one medical man to every 1100 insured persons. Did those who said that that was extravagant know that there were industrial districts where one medical man would give attendance to 5000 persons? One doctor attended between 3000 and 4000 persons, men, women, and children, in districts like those in South Wales, Durham, and Northumberland. He did not say that at once they would succeed in establishing a perfect system. That was an unreasonable demand. The Opposition were asking the Government to establish in three weeks a system which must necessarily take years to perfect. The Government could say that they had made, not only a beginning, but an extraordinarily successful beginning—a beginning which honourable Members opposite never dreamed of.

*Medical Representation on Insurance Committees.*

Whose fault was it that the medical profession were not on the Insurance and Advisory Committees? The Insurance Commissioners had asked the British Medical Association to supply a list of doctors in each district to represent the medical profession on the Advisory Committees and Insurance Committees. They refused. And now complaint was made that they were not on the Advisory Committees, and that some regulations were not ready for the purpose of their election. Whose fault was it that the medical profession did not have a share in framing those regulations? Representatives of the medical profession were put on the Advisory Committees. The representatives of the British Medical Association cleared out and withdrew every other man whom they possibly could. What right had honourable Members to complain that these matters were not settled by doctors when the British Medical Association did everything in its power to withdraw every medical man who was invited there to help in framing the rules?

*Private Arrangements of Insured Persons.*

Regarding what he had promised about the right of insured persons to make their own arrangements, he stood to every word he had said. He had said that it would be possible in any district if insured persons did not care for the capitation system to pool the whole of their money and to draw upon that amount to the extent as far as it went. He went beyond that and said that the insured person would be liable for the balance. What happened in those cases? By this grant the balance had been wiped out and the Government were now enabling the doctors and societies where the insured persons preferred the pooling arrangement to enter into it on the one condition that this grant was to be paid and not a penny piece was to be charged in respect of the balance against the insured persons. In Manchester the very arrangement which he suggested in the Opera House had been carried out and throughout the whole of the great county of Lancashire. What was the arrangement? The medical men there said, "We do not like the capitation system and we do not like treating people at 8*s.* 6*d.* per head, or whatever it may be, and we prefer that the 8*s.* 6*d.*, or 6*s.* 6*d.*, or 7*s.* should be put in a pool and that each of us should attend on the old system our patients and at the end of a given period we should send in our bills, and that those bills should go as against the pool, and if it is insufficient we shall have a dividend." If it was more than sufficient in some districts, a very good use of it would be made. He was asked why the Insurance Commissioners did not allow insured persons to make their own arrangements? This was never intended save in exceptional cases. He was said to be forcing the panel system on insured persons. The panel system was the choice of the British Medical Association, which refused to have anything to do with the Approved Societies. It was now said that the panel system was an instrument of torture manufactured by the Chancellor of the Exchequer for the tormenting of an innocent profession. It was not his invention.

Mr. WORTHINGTON EVANS: But you are using it?

Mr. LLOYD GEORGE: Who put it in my hands? I am doing it for their own good and they will realise it by and by. They convinced me that the panel system is the best. It took weeks to do it. They convinced me so thoroughly that I do not see my way to change again. The panel system, he continued, meant that any medical man could go on it. That meant a free choice of doctors. No Act of Parliament really could compel a doctor to attend a man or compel him to go on the panel. All he could do was what the medical profession asked him to do, and that was to leave an open door to them without any qualification beyond those which they had won at their examinations and which they retained. To try to make medical men serve against their will would be bondage and slavery. The Government wanted perfect freedom for the medical profession. There was no difficulty anywhere except in London. Here, he was sorry to say, it was not medical but political. When the London County Council elections were over this particular difficulty would vanish. The movement for "your own arrangements" had been organised entirely and exclusively by a certain section of the medical profession who wanted to break down the Act for political purposes. The Insurance Commissioners could not permit this arrangement on the scale which it was demanded in London, because it would break down the Act. One advantage of the panel system was that it guaranteed medical service to every insured person, but if they allowed persons to make their own arrangements to any very large extent the doctors would pick out the best lives and leave the broken-down lives to the panel doctors. That would mean that it would be impossible to form a panel at all. This would be grossly unfair. The panel system secured also effective control. It could be seen that a doctor who was on the panel did render the services which he had contracted with the Insurance Committee to give, and if he did not do that he could be called to account. A good many doctors would like to get away from that, but was Parliament to pay the same money to the doctor who was prepared to carry out the regulations of the State and to subject himself to a State supervision, and a doctor who did as he pleased and only had his own patients to control him?

*The Attainments of Panel Practitioners.*

It had been stated that there would be no proper medical benefits under the Act on January 14th, or if there was medical attendance it would be a sort of refuge for the medical profession. The British Medical Association said that 8000 medical men at least must join the panels in order to work the Act. Now 15,000 had joined the panels. With regard to the quality of the medical men, practically throughout Great Britain almost all who had been engaged in industrial practice were on the panels to-day. London might be a possible exception. In all the great cities—Glasgow, Liverpool, Manchester, Bradford, Newcastle, Birmingham, and Sheffield—the vast majority of the doctors who had been engaged in industrial practice were now on the list, and it was very remarkable that although they had been working for three or four weeks under difficulties which would naturally come at the beginning, the number of complaints which had been received up to the present were infinitesimal in the whole of those districts. Of course, those who were administering the Act could not guarantee the quality of every doctor. There were good and bad doctors, and there were mediocre ones. That was the case in every profession. Money did not always buy a good doctor. But there were first-class, competent, and skilled men on the panels, and if there were doctors on the lists who were not competent, at any rate they had been chosen by the insured persons. These the insured persons need not select. The right honourable gentleman briefly reverted to the case of the East-End of London. There were many districts there which were under-doctored, and he had no doubt that in the next few months doctors would drift into those areas. They were beginning to do so. There was a great deal of hard work to do, but this was due largely to the fact that in the past the poor people had not been attended at all. Half, if not two-thirds, of the population of this district had never received medical attendance at all except what they had got as out-patients of the hospitals. For the first time they could call in their own doctor. That undoubtedly increased the work of the doctors.

*Filling up the Cards.*

There was another class of work which he had no doubt increased the burden of the doctors at the beginning: that was the filling up of the medical benefit cards. It did not take very long, it was true, to fill up a card, but if a practitioner had 500 patients on his list it took some time to fill in his name and address, and very often the name and address of the patient as well.

Mr. WORTHINGTON EVANS: And there is the book.

Mr. LLOYD GEORGE: I agree, and the trouble is threefold to people who are not in the habit of doing this sort of thing. But that is a burden which is passing away. They have only to do it once and there is an end of it. In future they will only have to fill these cards in in respect of new patients.

Sir PHILIP MAGNUS: No, every time.

Mr. LLOYD GEORGE: No, the honourable gentleman is perfectly wrong. They have only got to fill the cards and send them in the first time. They had to send the names of those who accepted them as doctors once to the Insurance Committee. Therefore, all this trouble which had taken place in the last fortnight was passing away, and in the course of the next week or two there would be very much less. He

should like to say a few words about the keeping of books and papers by the medical profession. He thought that it was possible to simplify some of the documents that had to be filled up, and the Insurance Commissioners were looking into the matter. It was one of those things where experience would teach how to work the Act. He had always admitted that amendments would undoubtedly be necessary, and had said that experience alone would show what amendments were required. This was one of the amendments in the Regulations which he thought would be made. He thought that there would have to be some simplification to some of these documents.

*"The Tubercular Sixpence."*

He would like to refer to what was called "the tubercular sixpence" which made the doctors' 6*s.* 6*d.* up to 7*s.* There had been complaints, notably from Scotland, that the money had not been paid entirely out of this Treasury grant but out of the sanatorium 1*s.* 3*d.* That sanatorium 1*s.* 3*d.* was used for dispensary treatment, domiciliary treatment, and sanatorium or institutional treatment, and the suggestion was that the whole of the domiciliary treatment should be provided out of this sum and not out of the 1*s.* 3*d.* It was true that even up to the present most of the work which had been done in respect of sanatorium benefit had been dispensary and institutional. The only part he was concerned with now was that wherein the doctor was called upon for the sum of 6*d.* to deal with the patient in his own home. This was criticised from two points of view. The doctor said that he was not paid enough, and the Scottish county councils that he was paid too much. The number of insured persons who came up for sanatorium treatment at first was necessarily small, but the number would increase from week to week. In November, for instance, there were about 5000 applicants for sanatorium treatment. Half of these were treated at the dispensaries and by doctors at their own homes, and half in sanatoria. The figures received for this week showed that 5000 had been sent to institutions, and the number was increasing. But it was the doctor's duty also to look after the patient when he returned from the sanatorium to see how he got on. He said that to show that the 6*d.*, although a liberal allowance, did cover a good deal of work which on the face of things was not apparent. As time went on more and more people would be sent to sanatoria. It would have been a great mistake to attempt to build sanatoria all over the country in six months. The authorities must proceed tentatively even in regard to the treatment of consumption. Concluding, the Chancellor of the Exchequer said that in Germany the Insurance Act had not been brought into operation for a couple of years after it passed, and there was something to be said for that, but the suffering alleviated, the lives saved, and the experience already gained had justified the determination of H.M. Government to bring the Act into operation at the earliest possible moment. In spite of prejudice and an organised appeal to prevent the medical profession rendering service 14,000,000 persons were now insured, and he was glad in spite of every obstacle that the Government had determined to go on.

*Medical Service in the Highlands.*

Several Scottish Members raised the question of the Medical Service in the Highlands.

Mr. LLOYD GEORGE, in reply, said that the recent report of Sir JOHN DEWAR'S Committee on the Medical Service of the Highlands revealed the existence of a very special case. Taking any other part of the United Kingdom it was found that insured persons were 1 in 3 of the population. There they were 1 in 10 or 1 in 12. Where the need was greatest the fund was smallest. There were very appalling stories of what had happened there in districts where there were neither doctors nor nurses, and where poor women were left without trained aid of any kind in very trying circumstances. Humanity demanded that in the case of those who garrisoned those remote parts and who produced such a fine race which had rendered gallant service to the Empire, the least that the authorities could do was to go out of their way to help them in the trying condition of sickness which befell all of them. Honourable Members for the Highlands might rest assured that the £10,000 in the Estimates was put down as an earnest and guarantee that the Government meant to take the matter of the medical service in hand.

The vote was agreed to after a debate of seven hours' duration.

*The Select Committee on Patent Medicines.*

The Select Committee of the House of Commons, which for some months has been inquiring into the subject of patent medicines, has finished its work for the session. It has not been able to take all the evidence which it thought desirable should be heard, and accordingly a report has been presented to the House of Commons recommending that it should be reappointed next session.

## HOUSE OF COMMONS.

WEDNESDAY, FEB. 5TH.

*Migratory Insured Persons.*

In reply to Mr. G. LOCKER-LAMPSON Mr. MASTERMAN said: If an insured person moves from the area of one insurance committee to that of another, he can, by giving notice to the second committee, obtain medical attendance, and also such certificates as are required to be furnished in connexion with any claim for sickness benefit from a doctor on the panel in the second area.

*Surgical Appliances under the Insurance Act.*

The Marquis of TULLIBARDINE asked the Secretary to the Treasury (1) why, under the National Insurance Act, only arm splints were scheduled; what happened if an insured person broke his thigh; and who supplied the thigh splints since chemists were only paid for those articles on the schedule; (2) whether, in view of the fact that medicated wool was not mentioned in the list of appliances to be provided as part of the medical benefits in terms of No. 27 of the Regulations in the Second Schedule to the National Insurance Act, insured persons were expected to pay for this themselves, seeing that medicated wool was almost an essential in most surgical cases; (3) whether, under the National Insurance Act, in the case of gauzes and lints, sal alembroth was scheduled; and, if so, whether regard was had to the fact that owing to the chemical action between the cotton and the alembroth this medication did not last at the outside for more than three months; and (4) whether the usual custom in hospitals and infirmaries was to have white or grey open-wove bandages six yards in length; whether under the National Insurance Act they were required to be only four yards; whether four yards were absolutely useless for binding an arm; whether calico for supporting purposes had always been used six yards in length and was now ordered to be three yards; whether crêpe bandages had always formerly been made in five-yard lengths; whether under the National Insurance Act they had to be six yards; and would he state the reason for these changes.—Mr. MASTERMAN said in reply: The splints prescribed in the list of appliances are not restricted to arm splints, and the bandages are not restricted as to length as suggested by the noble lord. The gauze and lint referred to were included because some doctors attach importance to their use under certain conditions, but doctors may, of course, use them or not as they please. I am advised that the surgical dressings included in the list are adequate for the treatment of the surgical cases which fall within the scope of medical benefit.

The Marquis of TULLIBARDINE: Am I to understand that the splints for fractures can be got and are on the schedule?—Mr. MASTERMAN: As I understand, all splints and apparatus can be got which will be required for these surgical cases, and which fall within the scope of medical benefit.

*Dispensers of Medicines and the Insurance Act.*

Answering together nine questions on the subject of dispensers who were not recognised under the Insurance Act as qualified to dispense medicines Mr. MASTERMAN said: By Clause 15 (5) (3) the Insurance Act prohibits arrangements being made for dispensing medicines with persons other than persons, firms, or bodies corporate entitled to carry on the business of a chemist and druggist under the provisions of the Pharmacy Acts, 1868 and 1908. Unqualified persons who for three years immediately prior to the passing of the Act have acted as dispensers to duly qualified medical practitioners or to public institutions have a right under the Act to dispense in the service of such persons, firms, or bodies corporate, with the same rights and limitations as those existing before the passing of the Act. This clause was deliberately approved by the House after a full debate and without a division. On an amendment proposing to extend such a right to dispense to persons qualified under the Apothecaries Act of 1815, the Chancellor of the Exchequer promised that no one who was qualified to dispense before the passing of the Act should be cut out of the Act, and a subsection protecting the interests of these persons was inserted on the Report stage. The Commissioners have no power to alter this decision of Parliament, nor have I any evidence at present that Parliament desires (apart from the possibility of meeting special cases of hardship) that dispensing should be generally done by unqualified persons.

Mr. O'GRADY asked whether many of the men who were now shut out from dispensing had not dispensed for medical men for a considerable number of years, whether they were not now suffering in their business, and whether the result of the Act had not been to create a monopoly for pharmaceutical chemists.—Mr. MASTERMAN answered: I do not think these men were qualified to dispense except under the supervision of a medical man.

*The Clerical Work of Panel Practitioners.*

Mr. G. LOCKER-LAMPSON asked the Secretary to the Treasury whether he would consider the advisability of simplifying the clerical work now imposed on panel doctors under the National Insurance Act; whether any complaints had been received from such doctors respecting the labour entailed in filling in the day books; and whether there was a scheme for simplification now before the Insurance Commission.—Mr. MASTERMAN replied: Yes. The principal pressure of clerical work has been due to the initial work in connexion with the selection of doctors and registration of patients at the starting of medical benefit, and this is not a difficulty which will recur. The Insurance Commissioners yesterday received a deputation from the National Insurance Practitioners' Association, who laid before them also certain proposals for simplifying the ordinary clerical work required to be performed by doctors on the panel. Those proposals are receiving the careful consideration of the Commissioners.

Mr. HUNT asked the right honourable gentleman whether he was aware that panel doctors under the National Insurance Act had so much clerical work to do that they had not much time left to attend to their patients; could he say how many people had died because they were unable to get the services of a doctor under the National Insurance Act till too late; and what steps he proposed to take to alter this state of affairs.—Mr. MASTERMAN replied: The answer to the first part of the question is in the negative; the second, therefore, does not arise.

Mr. HUNT: Does the right honourable gentleman deny that people have died because they were unable to get the service of a doctor under the Insurance Act.—Mr. MASTERMAN: I do deny it.

Sir J. D. REES: Are the verdicts of juries of no avail with the right honourable gentleman? Does he treat those verdicts as waste paper?—Mr. MASTERMAN: I have heard of no verdict of any jury at all except a statement made by a coroner's jury which is now subject to investigation by a committee appointed by the London Insurance Committee.

*The Financial Provision for Medical Benefit.*

In answer to Mr. CASSEL Mr. MASTERMAN said: It is proposed to proceed with a supplementary estimate for medical benefit in order to obtain the sanction of the House at the earliest possible date to the incurring of expenditure upon medical benefit in excess of the amount

available out of contributions under the National Insurance Act. It is very desirable, regard being had to the provisions of Section 61 of the National Act, and in order that Insurance Committees may be in a position to enter into contracts for the whole year that the whole amount available for medical benefit should be credited to the committees as soon as possible after the commencement of the calendar year as is contemplated by the financial provisions of the Act, and this cannot be done unless the money is issued from the exchequer before the 31st proximo.

*Suggested Amendment of National Insurance Act.*

Answering Mr. G. LOCKER-LAMPSON Mr. MASTERMAN said: If and when experience shows that amendments of any details of the Insurance Act are desirable, legislation embodying such amendments will undoubtedly be introduced. The Commissioners will be glad to receive at any time and from any quarter any suggestions for possible improvement. Criticism up to the present, however, has been singularly barren in constructive suggestions.

THURSDAY, FEB. 6TH.

*Sanatorium Benefit in the East End.*

Mr. H. LAWSON asked the Secretary to the Treasury whether arrangements would be made to prevent consumptive patients in the East End of London from being kept nearly eight weeks before any decision was given as to whether they could obtain sanatorium benefit, seeing that under the present circumstances more harm than good was in many cases done by preventing alternative treatment.—Mr. MASTERMAN replied: I am not aware of any such delay before decision as is suggested by the honourable Member, although some patients have been kept waiting a short period while the accommodation for them is being completed. Patients who remain at home until accommodation is ready in sanatoria, so far from being prevented from receiving alternative treatment, are provided with it, medical attendance, medicine, and articles ancillary to their treatment, such as extra food, all being supplied to them at the expense of the insurance funds. I am informed that the Downs School at Carshalton, which is being equipped as a sanatorium for over 300 cases, will commence receiving patients from the London Insurance Committee in a few days' time, and so relieve any waiting list at present existing.

*Private Arrangements under the Insurance Act.*

In reply to Mr. G. LOCKER-LAMPSON Mr. MASTERMAN said: I am not aware of any general refusal of any Insurance Committee to grant permission to insured persons to make their own arrangements when the panel system is working, although I believe some committees have suspended the granting of such permission until they are satisfied that a panel system to provide adequate attendance for all insured persons is assured.

*Middlesex Insurance Committee and Panel Contracts.*

Answering Mr. NEWMAN Mr. MASTERMAN said: I understand that the Middlesex Insurance Committee recognised that it was impossible to allow doctors who had made contracts for a definite period and had not been released to break these contracts and yet undertake the attendance of insured persons within the same period upon different terms.

*Medical Representation on Insurance Committees.*

Mr. NEWMAN asked the Secretary to the Treasury whether Regulations would be framed by the Insurance Commission to provide for the election of two representatives of the medical profession on each Insurance Committee; whether he would state why these representatives had not been already elected; and whether, where more than two candidates offer themselves for election, it was proposed that the method of election should be that known as the block vote or that known as the single transferable vote.—Mr. MASTERMAN replied: Regulations have been issued providing for the election of two representatives of the medical profession to each Insurance Committee, and a circular explaining the method of election and enclosing a nomination paper has been sent to every practitioner appearing on the Register. The method of election is that known as the single transferable vote.

*Local Medical Committees.*

Mr. HILLS asked the Secretary to the Treasury whether any Local Medical Committees, as required by the National Insurance Act, had yet been formed in any county, and, if so, how many and by what method such Committees were appointed.—Mr. MASTERMAN answered: Yes; 71 Local Medical Committees have been recognised by the Insurance Commissioners in accordance with Section 62 of the National Insurance Act. The Commissioners require to be satisfied that the Local Medical Committee, before it is recognised, is fully representative of the medical practitioners in the area.

MONDAY, FEB. 10TH.

*The Distribution of Insured Persons.*

Sir J. D. REES asked the Secretary to the Treasury to state under what obligation a doctor on a panel lay to accept as a non-paying patient a person who chose him as his or her medical adviser; and what redress had a person who, having chosen a particular doctor, was rejected by such doctor, or perhaps by a succession of doctors chosen by him or her.—Mr. MASTERMAN replied: One of the advantages enjoyed by a doctor who accepts insured persons on his list is that none of them are non-paying patients, and no obligation rests on any doctor on the panel to accept a non-paying patient. The Regulations provide for the distribution among the doctors on the panel of any insured persons who have been refused by the doctor whom they have selected, and so far as is practicable under arrangements made by the doctors on the panel.

*The Income Limit in Perth.*

Mr. FREDERICK WHYTE asked the Secretary to the Treasury whether he had now received any communications on the subject of the reported decision by the Perth Borough Insurance Committee to fix an income limit for the purposes of medical benefit; whether he was aware that due public intimation of the intention of the Committee was not given to those concerned; and whether he proposed to take any action in the matter.—Mr. MASTERMAN said in reply: I understand that public notice of the proposal to fix an income limit was given by the Insurance Committee by means of advertisement in the public press, and that a public meeting was held on Saturday last at which representatives of Approved Societies as well as medical practitioners discussed the question. The Insurance Committee are further considering the question early in this week.

*Medical Referees and the Panel.*

Mr. BIRD asked the Secretary to the Treasury whether medical referees under the Workmen's Compensation Act were debarred from going on to the panel in accordance with the terms of the memorandum issued to them.—Mr. MASTERMAN replied: The answer to the question is in the negative.

*Surgical Dressings under the National Insurance Act.*

Mr. RUPERT GWYNNE asked the Secretary to the Treasury whether there were any regulations or provisions by which medical practitioners under the National Insurance Act could supply surgical dressings and lotions to insured persons in the case of accidents and obtain payment for the same from the Insurance Committees; and, if not, would he consider the desirability of providing for such cases.—Mr. MASTERMAN answered: Yes, paragraph 30 (2) (h) of the Medical Benefit Regulations provides for the doctor supplying and being paid for such articles in the circumstances stated.

TUESDAY, FEB. 11TH.

*Ireland and Medical Benefit.*

In reply to Mr. FRED HALL (Dulwich), Mr. MASTERMAN said: If medical benefit were provided in Ireland upon the same terms as in Great Britain, and if the contributions were adjusted accordingly, the additional cost to the Exchequer over and above the present provision on the basis of those actually insured would be approximately £40,000. The general extension of medical benefit to Ireland could not be effected without legislation.

*Sickness Certificates in Ireland*

Mr. MASTERMAN informed Mr. O'DONNELL that it was stated by the Irish Insurance Commissioners that a certain amount of difficulty had arisen in Ireland in connexion with sickness certificates. A sum of £50,000 was being taken in the supplementary estimates which would be to a large extent available for defraying the reasonable cost of such certificates. Societies could adopt alternative methods of obtaining evidence of illness if excessive fees were charged for medical certificates, and the Irish Commissioners had issued to all societies and branches in Ireland a circular pointing out that the societies, if they thought fit, might obtain evidence of illness by the adoption of a system of lay visitors, by the inspection of medical relief registers, or by the acceptance of a written statement from a clergyman, magistrate, or other responsible person who could testify to the claimant's incapacity for work.

*Insurance Committees and Free Choice of Doctor.*

Mr. GODFREY LOCKER-LAMPSON asked the Secretary to the Treasury whether the Insurance Committees in the county of Middlesex, the Isle of Ely, and Sheffield had refused free choice of doctor outside the panels unless exceptional circumstances were proved, and whether any definition of exceptional circumstances had been laid down by them.—Mr. MASTERMAN replied: I am not aware that the three Insurance Committees mentioned have acted differently from other Committees. The Act only contemplates permission being given to an insured person to make his own arrangements in exceptional circumstances. It is for the Committee to decide upon each application whether the circumstances of the case are, or are not, exceptional.

*Unqualified Practice under the National Insurance Act.*

Sir J. D. REES asked the Secretary to the Treasury whether an insured person was entitled to the provision of the services of a herbalist instead of a doctor when desired; and what benefits would be provided for Christian Scientists under the National Insurance Act.—Mr. MASTERMAN said in reply: Duly qualified medical practitioners alone have the right to be included in a panel list. It is, however, open to the persons who belong to an unorthodox school of medicine to apply to their Insurance Committee for permission to make their own arrangements for medical treatment, and if such permission is given the committee will make a contribution towards the cost of treatment.

*Operations on Insured Persons.*

Mr. FRED HALL (Dulwich) asked the Secretary to the Treasury whether Regulations had been made as to the arrangements to be followed for the performance of operations on insured persons who could not be dealt with at hospitals; and whether these would in all cases have to be dealt with at the patient's own home.—Mr. MASTERMAN answered: No such Regulations have been made; whether an operation should be performed at a patient's home, or at the doctor's surgery, or at a hospital must depend upon the circumstances of each particular case.

*The New Vivisection Regulations.*

Mr. FRED HALL (Dulwich) asked the Secretary of State for the Home Department to state how it was proposed to appoint the inspectors to carry out the new regulations with regard to vivisection; the salaries to be attached thereto; and whether the positions would be filled by open competition.—Mr. MCKENNA furnished the following reply: I propose to select from among all candidates who may apply those who appear to me best qualified to discharge the duties of the post. If by open competition the honourable member means a competitive examination, that is obviously inapplicable to posts of this nature. I am issuing to the press, including the medical journals, a statement of the duties of the post and the conditions of appointment. The appointments will be made for a year in the first instance, and the salary will be £500. If the appointments are continued the salary will rise by £20 a year to a maximum of £600. The persons appointed will be required to give their whole time to the work.

WEDNESDAY, FEB. 12TH.

*Limited Panel Contracts.*

Sir PHILIP MAGNUS asked the Secretary to the Treasury whether, in the case of a doctor having joined a list or panel on the understanding that he contracted to attend only a limited number of insured persons, he might be required later on, as a condition of his remaining on the list or panel, to attend such additional number of insured persons as might be allotted to him as his share of the residue of persons to whom no doctor had been previously assigned.—Mr. MASTERMAN replied: The distribution of insured persons who have not been assigned to any doctor is to be carried out so far as practicable under arrangements made by the doctors on the panel. If such arrangements allow of a doctor attending only a limited number of patients there is no reason why it should be made a condition of his remaining on the panel that he should attend an additional number of insured persons, so long as the arrangements are in force.

Speaking on the Appropriation Bill, Mr. MASTERMAN said that the Insurance Commissioners saw no objection, now that adequate medical attendance was assured to insured persons, to permitting Insurance Committees to make arrangements with the doctors already on the panels for the admission to the panels of doctors who should treat only such persons as desired to continue to be treated by them.

## BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND COMPANY, LIMITED, London.

Walt Whitman's Anomaly. By W. C. Rivers. (The sale of this book is restricted to Members of the Legal and Medical professions.) Price 2s. 6d. net.

AMERICAN CLIMATOLOGICAL ASSOCIATION (Secretary: Dr. Guy Hinsdale, Hot Springs, Virginia, U.S.A.).

Transactions of the American Climatological Association for the Year 1912. Volume XXVIII. Price not stated.

ARROWSMITH, J. W., LIMITED, Bristol. CHURCHILL, J. AND A., London.

Robert Fletcher, 1823–1912. By Sir William Osler, Bart., M.D., F.R.S. Diseases bearing the Names of Saints. By Robert Fletcher, M.D. (The Bristol Medico Chirurgical Journal Reprint.) Price not stated.

BRYCE, WILLIAM, 54 AND 54A, Lothian-street, Edinburgh.

Students' Manual of Medical Jurisprudence and Public Health. By G. Haxton Giffen, F.R.C.S.I., D.P.H. Camb., and James Dundas, M.D., D.P.H., D.T.M., Medical Officer of Health, Ramsgate. Third edition. Price 5s. net.

CHURCHILL, J. AND A., London.

The Plant Alkaloids. By Thomas Anderson Henry, D.Sc. Lond., F.C.S., Superintendent of Laboratories, Scientific and Technical Department, Imperial Institute. Price 18s. net.

GALE AND POLDEN, LIMITED, 2, Amen Corner, Paternoster-row, London, E.C., and Wellington Works, Aldershot.

Field Sanitation for Territorial Officers. By Lieut.-Colonel C. Averill, V.D., M.D., D.P.H., Royal Army Medical Corps (T.F.). Price 1s. net.

HIRSCHWALD, AUGUST, Berlin.

Das Zweikindersystem im Anmarsch und der Feldzug dagegen. Von Dr. Julius Wolf, ord. Professor an der Universität Breslau, Geheimer Regierungsrat. Price M.1.

HODDER AND STOUGHTON, London. For the UNIVERSITY OF LONDON PRESS, LIMITED, London.

University of London. The Historical Record (1836–1912). Being a Supplement to the Calendar. Completed to September, 1912. First Issue. Price 5s. net. (Postage 4d.)

KIMPTON, HENRY, London. STENHOUSE, ALEXANDER, Glasgow.

A Treatise on Diseases of the Hair. By George Thomas Jackson, M.D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University; and Charles Wood McMurtry, M.D., Instructor in Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University. Price 16s. net.

LETCHWORTH PRINTERS, LIMITED, THE, Garden City, Letchworth, Herts.

Year Book of the Indian Guild of Science and Technology. 1912. Price not stated.

LEWIS, H. K., London.

The Bradshaw Lecture on the Biology of Tumours. Delivered at the Royal College of Surgeons of England on Thursday, Dec. 5th, 1912. By C. Mansell Moullin, M.A., M.D. Oxon., F.R.C.S. Published by request of the Council of the Royal College of Surgeons of England. Price 2s. net.

LIPPINCOTT (J. B.) COMPANY, London and Philadelphia.

International Clinics. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Twenty-second series, 1912. Price 35s. net for 4 quarterly volumes.

LOUIS MARCUS VERLAGSBUCHHANDLUNG, Tempelhofer Ufer, 7, Berlin, S.W. 61

Handbuch der Gesamten Sexualwissenschaft in Einzeldarstellungen. Band I: Die Prostitution. Erster Band. Von Dr. med. Iwan Bloch, Spezialarzt für Sexualleiden in Berlin-Charlottenburg. Mit einem Namen-, Länder-, Orts- und Sachregister. Erstes bis zehntes Tausend. Price, broschiert, M.10.

MASSON ET CIE, Paris.

Traité de l'Examen des Crachats. Étude Histo-Chimique, Cytologique, Bactériologique et Chimique. Par Fernand Bezançon, Professeur Agrégé à la Faculté de Paris; et S. I. De Jong, Ancien Chef de Clinique Médicale à la Faculté de Paris. Price Fr.10.

Le Problème Physiologique du Sommeil. Par Henri Piéron, Directeur du Laboratoire de Psychologie Physiologique de la Sorbonne. Price Fr.10.

NISBET, JAMES AND CO., LIMITED, 22, Berners-street, London, W.

The Surgery of the Stomach. A Handbook of Diagnosis and Treatment. By Herbert J. Paterson, M.A., M.C., M.B. Cantab., F.R.C.S. Lond. Price 12s. 6d. net.

REBMAN, LIMITED, London.

Text-book of Ophthalmology in the Form of Clinical Lectures. By Dr. Paul Roemer, Professor of Ophthalmology at Greifswald. Translated by Dr. Matthias Lanckton Foster, Member of the American Ophthalmological Society. Volume II. Price 10s. 6d. net.

Lateral Curvature of the Spine and Round Shoulders. By Robert W. Lovett, M.D., Boston, Assistant Professor of Orthopædic Surgery, Harvard Medical School. Second edition, revised and enlarged. Price 7s. 6d. net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ALLISON, J., M.D. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Kettering District of the county of Northampton.

ADAMSON, OSWALD J. W., L.R.C.P. Lond., M.R.C.S., has been appointed Junior School Doctor under the Education Committee of the County Borough of Brighton.

ASKEY, S. G., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

ATTWOOD, H. C., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

BANISTER, T. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Ear Department at St. Thomas's Hospital.

BRAITHWAITE, E. A., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Egremont District of the county of Cumberland.

BRYAN-BROWN, D. S., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

BUTLER, E. N., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

CLARKE, J. MICHELL, M.D. Cantab., F.R.C.P. Lond., has been reappointed Honorary Senior Physician to the Bristol General Hospital.

CORBETT, C. D. H., M.D., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Skin Department at St. Thomas's Hospital.

DAUNT, F. E., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Throat Department at St. Thomas's Hospital.

DOUBBLE, M. S., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Perranporth District of the county of Cornwall.

DOYNE, P. G., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Children's Medical Department at St. Thomas's Hospital.

DUNLOP, J., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Sandhead District of the county of Wigtown.

EVANS, A. T., M.B. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Llandyssil District of the county of Carmarthen.

FOLEY, W. B., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

HAMILTON, A. K., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Senior Obstetric House Physician at St. Thomas's Hospital.

HART, W. J., B.M., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

HUMPHRYS, F. J., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

KIMBER, W. J. T., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Ear Department and to the Children's Medical Department at St. Thomas's Hospital.

LOUGHNANE, F. McG., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

MARSDEN, W. G., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Junior Obstetric House Physician at St. Thomas's Hospital.

MITCHINER, P. H., M.B., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

OAKDEN, W. M., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at St. Thomas's Hospital.

PETTY, M. J., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

RAYNER, E., M.B., B.C. Cantab., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

RIXON, C. H. L., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

ROBERTS, FF., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

ROBERTS, G. H., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Children's Surgical Department at St. Thomas's Hospital.

RUSSELL, W. A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

SUTCLIFFE, A. L., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

SYMONS, W. J. P., M.R.C.S., L.R.C.P. Lond., has been appointed Clinical Assistant to the Children's Surgical Department at St. Thomas's Hospital.

THOMPSON, HERBERT P., M.D., Ch.B. Edin., F.R.C.S. Edin., has been appointed Assistant Physician to the Harrogate Infirmary.

THOMSON, WYVILLE S., M.B., Ch.B., D.P.H. Edin., has been appointed Senior Medical Officer to the Tuberculosis Dispensary, Leicester, and Senior Assistant Medical Officer of Health.

TODHUNTER, J. R. A. D., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

VERDON, P., M.R.C.S., L.R.C.P. Lond., has been appointed Ophthalmic House Surgeon at St. Thomas's Hospital.

WAGSTAFFE, W. W., B.M., B.Ch. Oxon., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

WILLIAMSON, O. K., M.D. Cantab., F.R.C.P. Lond., has been appointed Assistant Physician to Westminster Hospital.

WINGFIELD, RODOLPH CHARLES, M.B., B.Ch. Oxon., has been appointed Medical Officer in Charge of the Tuberculosis Department at St. Thomas's Hospital.

WORDLEY, E., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

AGRA, DUFFERIN HOSPITALS.—Female Doctor. Salary Rs.300 a month, with free quarters.

ASHTON-UNDER-LYNE UNION WORKHOUSE.—Assistant Resident Medical Officer. Salary £150 per annum, with rations, laundry, and residence.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

BEDFORD COUNTY HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry. Also Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £75 per annum, with board, rooms, and laundry allowance.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer and Resident Surgical Officer for six months. Salary £80 per annum each, with board, washing, and attendance.

BIRMINGHAM UNION, DUDLEY-ROAD INFIRMARY.—Chief Medical Officer. Salary at rate of £750 per annum, with apartments, &c.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board and laundry.

BIRKENHEAD UNION INFIRMARY.—Senior Assistant Resident Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon for six months. Salary £80 per annum, with board, lodging, and laundry.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRADFORD CITY TUBERCULOSIS DISPENSARY.—Assistant Medical Officer. Salary £300 per annum.

BRADFORD ROYAL INFIRMARY.—Two House Surgeons, unmarried. Salary £100 per annum, with board, residence, and washing.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS.—Second Assistant to Medical Superintendent. Salary £150 per annum, with apartments, rations, &c.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer, unmarried. Salary £160 per annum, with rooms, coals, gas, and attendance.

BRISTOL ROYAL INFIRMARY.—Honorary Surgeon, and, if necessary, Honorary Assistant Surgeon.

BURY INFIRMARY.—Senior House Surgeon. Salary £110 per annum, with board, residence, and washing. Also Junior House Surgeon. Salary £80 per annum, with board, residence, and washing.

CARDIFF, KING EDWARD VII 's HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £120 per annum, with board, washing, apartments, &c.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Honorary Assistant Ophthalmic Surgeon.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon.—Salary £90 per annum, with rooms, board, washing, and attendance.

CROYDON BOROUGH HOSPITAL.—Assistant Resident Medical Officer. Salary £120 per annum, with board, lodging, and washing.

DARLINGTON HOSPITAL AND DISPENSARY.—House Surgeon, unmarried. Salary £120 per annum, with board, lodging, and laundry.

DAVOS PLATZ, SWITZERLAND, QUEEN ALEXANDRA SANATORIUM.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with board, residence, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, London, S.E.—House Physician for six months Salary at rate of £75 per annum, with board, residence, and washing.

EXMINSTER, DEVON COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary £130, with £50 per annum for Pathological Work.

FIJI, LEPER ASYLUM, Makogai Island.—Assistant Medical Officer. Salary £400 per annum, with quarters.

GLASGOW, WESTERN DISTRICT HOSPITAL.—Medical Officer. Salary £100 per annum, with board and lodging.

GRAVESEND HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.—House Surgeon, unmarried, for six months. Salary £30, with board and residence Also Resident Medical Superintendent. Salary 100 guineas per annum, with board and residence, &c.

HUDDERSFIELD ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £60 per annum, with board, residence, and washing.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

LANCASHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

LINCOLN GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £300 per annum, with apartments, fire, and lighting.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Physician and Three House Surgeons for six months. Salaries at rate of £60 per annum, with residence and maintenance.

LIVERPOOL ROYAL INFIRMARY.—Two Honorary Assistant Physicians and Honorary Laryngologist.

LIVERPOOL, ROYAL SOUTHERN HOSPITAL.—Two House Physicians and Three House Surgeons, all for six months. Salary in each case at rate of £60 per annum, with board and residence.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.

MAIDSTONE, WEST KENT GENERAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £80 per annum, with board, residence, and washing.

MANCHESTER, ST. JOHN'S HOSPITAL OF MANCHESTER AND SALFORD FOR THE EAR AND EYE.—Honorary Assistant Aural Surgeon.

MELTON, SUFFOLK DISTRICT ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £180 per annum, with board, apartments, attendance, and laundry.

MIDDLESEX HOSPITAL MEDICAL SCHOOL.—Senior Demonstrator of Anatomy. Salary at rate of £100 per annum.

MILLER GENERAL HOSPITAL FOR SOUTH-EAST LONDON, Greenwich-road, S.E.—Honorary District Medical Officers.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Honorary Dental Surgeon.

NESTING AND LUNNASTING.—Medical Officer. Salary £50 per annum.

NEWCASTLE-ON-TYNE DISPENSARY.—Four Visiting Medical Assistants. Salary £160 per annum.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £170. Also Resident and Assistant Resident Surgeons for Branch. Salaries £180 and £170 per annum respectively, with apartments, attendance, light, and fuel.

NOTTINGHAM WORKHOUSE INFIRMARY.—Two Resident Assistant Medical Officers, unmarried. Salary £150 per annum, with apartments, board, washing, and attendance.

PRESTON ROYAL INFIRMARY.—Senior House Surgeon, unmarried, for six months. Salary £80 per annum, with board, residence, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—Junior House Physician and Assistant Pathologist. Salary £60 per annum, with residence, board, and laundry.

REDHILL, EARLSWOOD ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and washing.

ROCHDALE INFIRMARY.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry. Also Junior House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £71 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES Red Lion-square, W.C.—Honorary Surgeon. Also Clinical Assistant.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80 per annum, with board, residence, and allowance for laundry.

SMETHWICK, CORNWALL WORKS DISPENSARY.—Assistant Medical Officer. Salary £300 per annum.

STAFFORD, COTON HILL MENTAL HOSPITAL.—Assistant Medical Officer, unmarried. Salary £170 per annum, with residence, board, and laundry.

STOCKPORT INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon. Salary £90 per annum, with board, residence, and laundry.

WARWICKSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £250 per annum.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Surgeon Accoucheur.

WORKSOP DISPENSARY AND VICTORIA HOSPITAL.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coal, gas, and attendance.

YORK RETREAT, HOSPITAL FOR THE TREATMENT OF MENTAL DISEASES.—Female Junior Assistant Resident Medical Officer. Salary £175 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Acts at Bideford, in the county of Devon; at Colne, in the county of Lancaster; at Loanhead, in the county of Edinburgh; and at Christchurch, in the county of Southampton.

# Births, Marriages, and Deaths.

## BIRTHS.

BOLTON.—On Feb. 5th, at the West Riding Asylum, Wakefield, the wife of Joseph Shaw Bolton, M.D., D.Sc., F.R.C.P., of a son.

HOLLIST.—On Feb. 5th, at Riseley Lodge, Maidenhead, the wife of G. W. C. Hollist, M.R.C.S., of a daughter.

## MARRIAGES.

GREENWOOD—COBELY.—On Feb. 8th, at Christ Church, Crouch End, Arthur Atkins Greenwood, M.B., B.S., to Phyllis, elder daughter of Mr. and Mrs. Frank S Cobely.

MCGRIGOR—DRYSDALE.—On Feb. 8th, at Christ Church, Streatham Hill, S.W., Captain D. B. McGrigor, R.A.M.C., to Dorothy Macgregor, elder daughter of Mr. and Mrs. A. J. Macgregor Drysdale.

## DEATHS.

DUFFIN.—On Feb. 10th, at his residence, 88, Manor-road, Wallington, Surrey, Alfred Baynard Duffin, F.R.C.P.

MCHARDY.—On Feb. 8th, at Dumfries, Malcolm Macdonald McHardy, F.R.C.S., in his 61st year.

POLLARD.—On Feb. 8th, at Bournemouth, Frederick Pollard, M.D. Lond., L.R.C.P., M.R.C.S., late Surgeon V Division Metropolitan Police, and formerly Physician to the Liverpool Infirmary for Children, aged 65. No flowers. Cremation at Woking on Thursday at 2.30 o'clock.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

### LISTER'S BOOKS.

WE note that in the new catalogue of second-hand books for private sale by Henry Sotheran and Co., London, is a remainder from the library of the late Lord Lister, of which the mere list fills 40 columns. It contains books on all sorts of subjects—medicine, of course, science, theology, Quakerism, Scotland, biography, poetry, the classics, and so forth—testifying to the catholicity of Lister's interests. The books vary in price from 1*s.* 6*d.* up to some pounds, and many of them contain inscriptions. The variety of subjects makes this a good opportunity for medical men to acquire a memento of the great surgeon in accordance with their predilections, and at a price within their means.

### THE USE OF FINGER BOWLS.

THERE appears to exist in some cities of the United States an objectionable custom, which is practised even in high-class restaurants and hotels, of having a number of finger bowls in use which do service for a succession of guests. The water in them is changed only at long intervals, and entirely at the discretion of the waiter. Attention has been drawn recently to the matter by Dr. C. H. Lavinder, a distinguished member of the United States Public Health Service, in a communication which was published in *Public Health Reports* for Jan. 3rd. In this article Dr. Lavinder draws particular attention to the fact that many persons in using these common bowls not only wash their fingers in them but also their lips. The conditions therefore resemble somewhat those of the common drinking cup which is now so universally condemned, though it may be added that the dangers from the common finger bowl are perhaps rather less in degree than those of the common drinking cup. The objectionable custom seems, according to Dr. Lavinder, to be far more widespread in the United States than is generally believed. It will be noted also that, according to our United States correspondent this week, Dr. Lavinder's observations are confirmed in almost every detail by investigations of the Buffalo (N.Y.) Health Department. We do not think, however, that this misuse of finger bowls occurs to any extent in this country; at all events, we have never personally observed it, nor have any of those to whom we have applied for information. In England, and more especially in London, much has been done of late years to improve the conditions under which food is stored, prepared, and served in restaurants and hotels, and the cleanliness of the service generally. We believe that in this country where finger bowls are included in the service of the table they are supplied to each customer in a cleanly condition and filled with fresh water. Dr. Lavinder's article will, however, have the effect of putting us on our guard and of making us more watchful in observing the state of the finger bowl presented to us whenever we have occasion to dine at a restaurant or hotel.

### THE NUMBER OF MEDICAL MEN IN EUROPE.

ACCORDING to *Kuracisto*, the monthly review of the International Esperantists Medical Association, there are 160,000 medical men in Europe, the number per 10,000 of inhabitants being 5 in Germany, 7 in England, 5·1 in France, and 5 in Italy. The nationality of the medical students in France is analysed by our contemporary. In January, 1912, there were 8285 medical students in France, comprising 7400 men, of whom 742 were foreigners, and 865 women, of whom 608 were foreigners. There were 816 Russians, 87 Turks, 63 Bulgarians, and 57 Roumanians, and all nations being represented with the exception of Japan, whose students prefer to take up their studies in Germany.

### MISPRINTS.

THERE is, as has been pointed out to us, a sad error in the spelling of an illustrious name in THE LANCET of Jan. 25th on page 261. The name of the great Tyndall is there spelt "Tyndale." No doubt as to the person meant can arise, but such errors are vexatious because they show that the human instinct to err is almost incorrigible. All our precautions seem to amount to nothing when a slip of this kind occurs; we can only be glad that no harm has been done.

### (1) ADJUSTABLE HEAD DRESSING; (2) BISMUTH GAUZE.

1. WE have received from Messrs. Burroughs, Wellcome, and Co., of Snow Hill Buildings, Holborn Viaduct, London, E.C., a specimen of their "tabloid" adjustable head dressing, which has already been described in our columns by its deviser. (See THE LANCET, Dec. 14th, 1912, p. 1662.) The bandage easily goes into an ordinary waistcoat pocket and for first aid or field use it should be most serviceable.

2. The use of bismuth gauze as a surgical dressing in the place of iodoform has well-recognised advantages. The "tabloid" bismuth gauze is issued in various sizes and packings, but the latest specimen we have received consists of a carton containing six yards of gauze, half an inch wide, with selvedge edges. The gauze is sterilised, and the carton is contained in a protective coating, which keeps it sterile. As is well known, bismuth gauze is odourless and non-toxic. The size under notice is convenient, particularly for the treatment of ear, throat, and nose.

### STAMMERING.

WE have received an illustrated pamphlet in book form entitled "The Beasley Treatment." This is substantially the prospectus of an establishment for the cure of stammering and speech difficulties, under the control of Mr. W. J. Ketley, son-in-law of the late Mr. Benjamin Beasley, who advocated a system for the treatment of stammering.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY**, Burlington House, London, W.

THURSDAY.—Prof. H. E. Armstrong, Mr. M. S. Benjamin, and Mr. E. Horton: Studies on Enzyme Action. XIX., Urease: a Selective Enzyme. II. Observations on Accelerative and Inhibitive Agents.—Prof. C. S. Sherrington: Nervous Rhythm arising from Rivalry of Antagonistic Reflexes: Reflex Stepping as Outcome of Double Reciprocal Innervation.—Dr. H. E. Roaf: The Liberation of Ions and the Oxygen Tension of Tissues during Activity (communicated by Prof. C. S. Sherrington).—Mr. W. Cramer and Mr. J. Lochhead: Contributions to the Biochemistry of Growth. The Glycogen Content of the Liver of Rats bearing Malignant Growths (communicated by Prof. E. A. Schäfer).—Prof. T. G. Brodie and Dr. J. J. Mackenzie: On Changes in the Glomeruli and Tubules of the Kidney accompanying Activity.

**ROYAL SOCIETY OF MEDICINE**, 1, Wimpole-street, W.

TUESDAY.

SECTION OF THERAPEUTICS AND PHARMACOLOGY (Hon. Secretaries: H. H. Dale, W. Langdon Brown): at 4.30 P.M.

*Discussion* (adjourned from Jan. 21st):
The Non-operative Treatment of Malignant Disease.

The discussion will be resumed by Dr. R. Knox, Mr. C. Rowntree, Dr. Finzi, Dr. Iredell, Dr. Haig, Dr. R. Bell, Dr. O. F. F. Grünbaum, Dr. Shaw Mackenzie.

GENERAL MEETING OF FELLOWS at 5 P.M.
Election of Candidates for Fellowship.

SECTION OF PATHOLOGY (Hon. Secretaries—H. R. Dean, Gordon W. Goodhart): at 8.30 P.M

Dr. H. Warren Crowe: A New Method for the Differentiation of Certain Streptococci.
Dr. Alfred A. Lendon: Ovarian Cystoma with Splenic Metastasis.
Dr. Arthur Hall: Obliterative Cholangitis with Dilatation of the Hepatic Ducts.

THURSDAY.

SECTION OF DERMATOLOGY (Hon. Secretaries—Wilfrid Fox, J. M. H. MacLeod): at 5 P.M.

*Demonstration of Cases.*

SECTION OF NEUROLOGY (Hon. Secretaries—Wilfred Harris, T. Grainger Stewart).

[In place of the February Meeting a Combined Meeting of the SECTIONS OF OPHTHALMOLOGY AND NEUROLOGY will be held on Wednesday, March 5th, at 8 P.M.]

FRIDAY.

SECTION OF OTOLOGY (Hon. Secretaries—H. J. Davis, G. J. Jenkins): at 5 P.M.

*Cases, Specimens, and Communications:*
Mr. Arthur Cheatle: Both Temporal Bones from 120 Individuals (with lantern slides).
Mr. E. B. Waggett and Mr. E. D. Davis: Osteoma of Mastoid.
Dr. Watson-Williams: A Periosteal Flap to Line the Bone Cavity in the Radical Mastoid Operation.
Dr. Dan Mackenzie: Otitic Abscess of Pterygoid Region; Drainage through External Auditory Meatus; Recovery.
Mr. R. Lake: Cyst of Concha: Section and Report.
Mr. G. N. Biggs: Specimen of Auricular Epithelioma.
Mr. H. J. Davis: (1) Boy, aged 5, Progressive Bilateral Deafness following Attack of Epidemic Cerebro-Spinal Meningitis Three Years ago, Boy now become Mute; (2) Woman, aged 32, Sudden Deafness following Scald to Membrana Tympani by Steam; Recovery; (3) Man, aged 55, Epithelioma of Middle Ear involving Middle and Posterior Fossæ of the Skull (with photographs).

SECTION OF ELECTRO-THERAPEUTICS (Hon. Secretaries—Cecil R. C. Lyster, G. Allpress Simmons): at 8.30 P.M.

*Discussion:*
To Consider the Use of X Rays in the Diagnosis of Pulmonary Tuberculosis.

**MEDICAL SOCIETY OF LONDON**, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Mr. J. Berry: The Surgery of the Thyroid Gland, with Special Reference to Exophthalmic Goitre (illustrated by specimens and photographs on view from 8.30 P.M.) (Lettsomian Lecture.)

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester-square, W.C.

TUESDAY.—4.30 P.M., Demonstration of Pathological Specimens. Cases sent for Consultation. Exhibition of Clinical Cases by Dr. Sibley, Dr. Bunch, Dr. Dockrell, and Dr. Griffith. 5.15 P.M., Discussion on the Sociological Aspect of Syphilis (opened by Dr. P. White, of Wigan).

MEDICO-LEGAL SOCIETY, 11, Chandos-street, Cavendish-square, W.

TUESDAY.—8.30 P.M., Medico-Legal Specimens will be shown.

ROYAL METEOROLOGICAL SOCIETY, Surveyors' Institution, 12, Great George-street, Westminster, S.W.

WEDNESDAY.—7.30 P.M., Papers:—Mr. W. H. Robinson: Periodical Variations of the Velocity of the Wind at Oxford.—Mr. J. S. Dines: Rate of Ascent of Pilot Balloons.—Mr. W. L. Balls: Meteorological Conditions in a Field Crop.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

WEDNESDAY.—8 P.M., Mr. E. Marriage: The Adulteration of Jam.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, Lecture Theatre of the Society, 17, Bloomsbury-square, W.C.

WEDNESDAY.—8 P.M., Prof. R. T. Hewlett: Microbiology and Pathological Chemistry and Microscopy in Relation to the Diagnosis of Disease (Lecture II.). (Post-Graduate Lecture.)

ROYAL MICROSCOPICAL SOCIETY, 20, Hanover-square, W.

WEDNESDAY.—8 P.M., Mr. E. J. Spitta: Report upon the Lenses of the late Joseph Jackson Lister.

CHELSEA CLINICAL SOCIETY, Club Rooms of the Medical School' St. George's Hospital, S.W.

TUESDAY.—8.30 P.M., Papers:—Dr. V. B. Orr: The Work of a Tuberculin Dispensary.—Dr. H. Dally: The Use of Tuberculin in Diagnosis and Treatment. A discussion will follow in which Dr. Barcroft, Dr. L. A. Clutterbuck, Dr. F. N. Griffiths, Dr. C. McClure, and others will take part.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith: The Upright Posture, its Evolution and Diseases. (Hunterian Lectures.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Mr. Willmott Evans: Clinique (Skin). 5.15 P.M., Lecture:—Sir W. J. Collins: An Efficient Ambulance Service for Accidents and other Casualties in London Streets and Other Places.

TUESDAY.—4 P.M., Dr. J. Collier: Clinique (Medical). 5.15 P.M., Lecture:—Dr. E. B. Smith: Asthma in Children.

WEDNESDAY.—4 P.M., Mr. R. Howard: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. D. Sommerville: Gastro-intestinal Medicine.

THURSDAY.—4 P.M., Dr. S. A. K. Wilson: Clinique (Medical). 5.15 P.M., Lecture:—Dr. D. W. Carmalt-Jones: Gait in Nervous Disease.

FRIDAY.—4 P.M., Mr. H. Eason: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Addison: Abdominal Injuries.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin. 5 P.M., Lecture:—Dr. R. Jones: Types of Insanity.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin. 5 P.M., Lecture:—Mr. R. Lloyd: Administration of Anæsthetics.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture:—Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2.15 P.M., Mr. W. Turner: Surgery 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.——2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. G. Holmes: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.——2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine. 3.15 P.M., Mr. L. McGavin; Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.——10 A.M., Dr. W. Steuart: Radiography.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks). 4.30 P.M., Special Demonstration:—Dr. T. R. Whipham: Selected Cases of Children's Disease.

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Mr. E. Gillespie: The Diagnosis and Treatment of Scoliosis.

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.

WEDNESDAY.—4.30 P.M., Dr. Fenton: Demonstration of Cases.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.

Course of Lecture-Demonstrations on Diseases of the Chest, with Special Reference to Tuberculosis (including a Tuberculin Course):—

MONDAY.—4.30 P.M., Mr. A. Evans.
THURSDAY.—4.30 P.M., Dr. J. H. Drysdale.
FRIDAY.—4.30 P.M., Dr. B. King.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Syphilis of the Nervous System, Cerebral Lesions.

FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. J. Collier: Syphilis of the Nervous System, Spinal Cord Lesions.

CANCER HOSPITAL, Museum of the Hospital, Fulham-road, S.W.

WEDNESDAY.—5 P.M., Dr. T. J. Horder: The Diagnosis of Cancer of the Stomach (illustrated by cases and microscopic and other specimens).

ROYAL EYE HOSPITAL (LONDON SCHOOL OF OPHTHALMIC SURGERY AND MEDICINE), St. George's-circus, Southwark, S.E.

TUESDAY.—4.30 P.M., Lecture:—Mr. Lyle: Inflammations of the Uveal Tract.

LISTER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea Bridge-road, S.W.

TUESDAY.—5 P.M., Dr. J. A. Arkwright: Some Recent Work on the Agglutination of Bacteria with Special Reference to Agglutination with Acids.

THURSDAY.—5 P.M., Dr. J. H. Smith: Recent Work on Hæmolysis.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.

TUESDAY.—2 P.M., Dr. W. Griffith: The Pathology of the Skin. 6 P.M., Mr. W. Hampson: X Rays. Other Skin Affections.

THURSDAY.—6 P.M., Dr. M. Dockrell: Seborrhœa and Psoriasis dealt with as Stages of the same Dermatitis in Symptoms, Diagnosis, and Treatment.

UNIVERSITY OF LONDON (KING'S COLLEGE), Physiological Laboratory, King's College, London, W.C.

MONDAY.—4.30 P.M., Dr. O. Rosenheim: Recent Advances in Chemical Physiology and Pathology.

UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.

TUESDAY.—8 P.M., Prof. K. Pearson: Heredity of Piebaldism and of Albinism in Man.

ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.

FRIDAY.—3.15 P.M., Mr. H. P. Boulnois: Hygiene of the Home (illustrated by lantern slides). (Chadwick Trust Lecture.)

**LONDON HOSPITAL MEDICAL COLLEGE** (UNIVERSITY OF LONDON), London Hospital, Mile End-road, E.

Course of Lectures and Demonstration on Neurology (illustrated with Clinical Cases):—

MONDAY.—4.30 P.M., Dr. T. Thompson: Signs and Symptoms of Injury to Peripheral Nerves.
TUESDAY.—4.30 P.M., Dr. Turnbull: Acute Inflammatory Diseases.
WEDNESDAY.—4.30 P.M., Dr. G. Holmes: Medulla Oblongata.
FRIDAY.—4.30 P.M., Dr. H. Head: Cerebro-spinal Syphilis.

**ANCOATS HOSPITAL, Manchester.**

THURSDAY.—4.15 P.M., Mr. W. R. Douglas: Enlargements of the Thyroid Gland, including Exophthalmic Goitre. (Post-Graduate Clinic.)

**MANCHESTER ROYAL INFIRMARY.**

TUESDAY.—4.30 P.M., Dr. Reynolds: Some Varieties and Causes of Ataxia. (Post-Graduate Clinic.)
FRIDAY.—4.30 P.M., Mr. Roberts: Tuberculosis of Bone. (Post-Graduate Clinic.)

**BIRMINGHAM GENERAL HOSPITAL.**

TUESDAY.—3.30 P.M., Dr. Parsons: Pyloric Stenosis in Infants. (Post-Graduate Clinic.)

**QUEEN'S HOSPITAL, Birmingham.**

FRIDAY.—3.30 P.M., Mr. Morrison: Demonstration of Surgical Cases. (Post-Graduate Clinic.)

*For further particulars of the above Lectures, &c., see Advertisement Pages.*

### A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

March 1st (University of London).—Eugenics Education Conference.
,, 17th–20th (Paris).—International Congress of Physical Education.
(Easter week) (Berlin).—Fourth International Congress for Physiotherapy.
March 25th (Berlin).—Twelfth Congress of the German Association for Orthopædic Surgery.
,, 28th–29th (Berlin).—Forty-second Congress of the German Surgical Association.
April 3rd–9th (London).—International Congress of Historical Studies.
,, 6th–12th.—Health Week.
,, 22nd–25th (London, Horticultural Hall).—Nursing Conference and Exhibition.
,, 26th (Ghent) (opens).—International Exhibition.
May 14th–18th (Paris).—Twenty-first Annual Congress of the Royal Institute of Public Health.
July 7th–12th (Exeter).—Twenty-eighth Congress of the Royal Sanitary Institute.
,, 16th–18th (Oxford, Keble College).—Oxford Ophthalmological Congress.
Aug. 4th and 5th (London, Caxton Hall).—English-speaking Conference on Infant Mortality.

## EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1912 were given in THE LANCET of Dec. 28th, 1912.

### VOLUMES AND CASES.

VOLUMES for the second half of the year 1912 are now ready. Bound in cloth, gilt lettered, price 16*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

### TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

| FOR THE UNITED KINGDOM. | | TO THE COLONIES AND ABROAD. | |
|---|---|---|---|
| One Year ... ... ... | £1 1 0 | One Year ... ... ... | £1 5 0 |
| Six Months ... ... ... | 0 12 6 | Six Months ... ... ... | 0 14 0 |
| Three Months ... ... | 0 6 6 | Three Months ... ... | 0 7 0 |

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs. 50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

### TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—MESSRS. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Feb. 12th, 1913.

| Date. | | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radio in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|---|
| Feb | 6 | 29·97 | S.W. | ... | 65 | 53 | 43 | 45 | 46 | Overcast |
| ,, | 7 | 30·04 | S.W. | 0·02 | 56 | 54 | 46 | 47 | 48 | Overcast |
| ,, | 8 | 30·25 | W. | 0·11 | 77 | 50 | 43 | 40 | 43 | Fine |
| ,, | 9 | 30·39 | S.W. | 0·02 | 55 | 52 | 43 | 45 | 47 | Raining |
| ,, | 10 | 30·43 | S.W. | 0·15 | 63 | 53 | 43 | 45 | 46 | Cloudy |
| ,, | 11 | 30·56 | S.W. | ... | 61 | 54 | 42 | 41 | 42 | Foggy |
| ,, | 12 | 30·67 | SSE. | ... | 51 | 47 | 38 | 40 | 40 | Foggy |

**The following journals, magazines, &c., have been received:**—Æsculape, Child, Annales de l'Institut Pasteur, Journal of Physiology, Parasitology, Biochemical Journal, Review of Neurology and Psychiatry, Annales de Gynécologie et d'Obstétrique, Indian Medical Record, Archives de Médecine et de Pharmacie Militaires, Revista de los Hospitales, Dominion Medical Monthly, Journal of Laryngology, Rhinology, and Otology, American Journal of Medical Sciences, Ash's Monthly, Bulletin et Mémoires de la Société de Radiologie Médicale de Paris, Revue de Gynécologie et de Chirurgie Abdominale.

## Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; Ashton-under-Lyne Union, Clerk to the; Mr. J. E. Adams, Lond.; After-care Association, Lond., Secretary of; Army and Navy Male Nurses' Co-operation, Lond., Secretary of.

B.—Mr. J. Boothroyd, Worksop; Benger's Food, Ltd., Manchester; Mr. W. G. Burcombe, Lincoln; Bristol Royal Infirmary, Secretary of; Dr. W. Blair Bell, Liverpool; Mr. M. E. Bolton, Lond.; Mr. N. Basu, Dacca; Messrs. Butterworth and Co., Lond.; Mr. T. B. Browne, Lond.; Messrs. J. Bell and Croyden, Lond.; Messrs. Baillière, Tindall, and Cox, Lond.; Messrs. J. Bale, Sons, and Danielsson, Lond.; Messrs. Burroughs, Wellcome and Co., Lond.; Mr. J. F. Briscoe, Alton; Dr. N. Bardswell, Midhurst; Mr. M. Bresillon, Lond.; Bedford County Hospital, Secretary of; Brighton, Hove, and Preston Dispensary, Secretary of; Dr. R. A. Barr, Nashville, U.S.A.; Barrett Manufacturing Co., Lond.; Mr. Arthur E. Barker, Lond.; Dr. Lewis C. Bruce, Murthly; Mr. A. A. Bradburne, Manchester.

C.—Miss Campbell, Lond.; Cornwall Works Dispensary, Smethwick, Secretary of; Coventry and Warwickshire Hospital, Secretary of; Coal-Smoke Abatement Society, Lond., Secretary of; Mr. V. Zachary Cope, Lond.; Messrs. T. Colman and Co., Lond.; The S. A. Crocker Co., Cincinnati, U.S.A.; Cornwall County Council, Bodmin, Secretary of; Mr. A. L. Clarke, Lond.; Dr. J. G. Collston, New York; Chelsea Clinical Society, Lond., Hon. Secretaries of; C. P.; Dr. J. F. Corson, Tumu; Messrs. Clayton, Lond.; Chesterfield and North Derbyshire Hospital, Secretary of.

D.—Dr. Robert L. Dickinson, New York; Messrs. G. T. De Fraine and Co., Aylesbury; Messrs. W. Dawson and Sons, Lond.; Sir Dyce Duckworth, Bart., Lond.

E.—Mr. F. W. Eldridge-Green, Lond.; Economy Supply Agency, Howrah, India; Edmonton Medical ociety, Canada, Librarian of.

F.—Dr. Simon Flexner, New York; Fine Art Society, Lond.; Mr. Claude Frankau, Lond.; Federation of University Women, Lond., Secretary of; Factories, Chief Inspector of, Lond.; Dr. J. D. Farquharson, Newcastle-on-Tyne; Dr. Leonard Findlay, Glasgow.

G.—Gloucestershire County Council, Gloucester, Clerk to the; Gravesend Hospital, Secretary of; Gellygaer Urban District Council, Hengoed, Clerk to the.

H.—Dr. Arthur F. Hertz, Lond.; Messrs. C. J. Hewlett and Son, Lond.; Mr. Heath, Guildford; Horton Infirmary, Banbury, Secretary of; Dr. H.; Huddersfield Infirmary, Secretary of; Dr. E. C. Hort, Lond.; Dr. W. H. Hamer, Lond.; Hoffmann-La Roche Chemical Works, Lond.; Messrs. Hoskins and Sewell, Birmingham; Mr. K. W. Hiersemann, Leipzig; Dr. John Henderson, Glasgow; Major L. W. Harrison, Lond.

I.—The "I D L" Industrials, Ltd., Newcastle-upon-Tyne; International Aero Exhibition, Lond.

J.—Dr. R. Lane Joynt, Dublin; Dr. Alfred C. Jordan, Lond.; Mr. Ian Jefferies, Gillingham; Dr. A. Johnson, Lond.; J. F. D.; Mr. H. W. Jackson, Lond.; Dr. H. J. Johnston-Lavis, Beaulieu; Dr. Henry Jellett, Dublin.

K.—Messrs. R. A. Knight and Co., Lond.; Mr. Richard Kershaw, Lond.; Mr. W. S. Kerr, Sheffield; King's College Hospital, Lond., Secretary of; Surgeon W. H. King, R.N., Devonport; Messrs. Kutnow and Co., Lond.

L.—Messrs. E. and S. Livingstone, Edinburgh; City of London, Medical Officer of Health of; Dr. Frederick Langmead, Lond.; Mr. E. Le Francois, Paris; Mr. M. G. Laradas, Akola; London Hospital Medical College, Secretary of; Mr. H. K. Lewis, Lond.; Mr. F. Otley Lovell, Lond.; Local Government Board, Lond.; Medical Officer to; Messrs. Lee and Martin, Birmingham; Dr. G. Stirling Landon, Wallington; Messrs. Lee and Nightingale, Liverpool; Mr. R. T. Lang, Lond.; Mr. F. G. Larkin, Lond.; Liverpool School of Tropical Medicine.

M.—Messrs. Menley and James, Lond.; Mr. R. Mosse, Berlin; Ministry of Education, Cairo, Director of; Messrs. F. Mundy, Gilbert and Co., Birmingham; Messrs. C. Mitchell and Co., Lond.; Mr. E. Merck, Lond.; Mr. W. Metcalf, Wallsend; Dr. G. D. McRae, Ayr; Medico-Psychological Association of Great Britain and Ireland, Lond.; Dr. Basil Martin, Leicester; Dr. Donald J. Munro, Lond.; Metropolitan Pharmacal Co., New York; Staff-Surgeon J. S. J. Murphy, R.N., Osborne, Isle of Wight; Messrs. Mather and Crowther, Lond.; Dr. C. Macmillan, Stevenston; Medico-Legal Society, Lond.; Professor Edward Malins, Birmingham; Maltine Manufacturing Co., Lond.; Staff-Surgeon G. E. Macleod, R.N., Devonport; Messrs. Macmillan and Co., Lond.; Mr. E. MacFarlane, Winthrop, Canada; Mr. F. Macfadyen, Margate; Mr. F. McClure, Dublin.

N.—Nottingham City Asylum, Clerk to the; Nottingham General Hospital, Secretary of; Captain V. B. Nesfield, I.M.S., Bijnor; Mr. H. Needes, Lond.; National Health Insurance Commissioners, Lond., Secretary of; Dr. J. B. Nias, Lond.; *The New Witness*, Lond.

O.—Oxford County Asylum, Littlemore, Clerk to the.

P.—Messrs. Peacock and Hadley, Lond.; Dr. L. T. Poole, York; Price's Patent Candle Co., Lond., Secretary of; Dr. R. J. Probyn-Williams, Lond.; Mr. W. B. Parsons, Combe-in-Teignhead; Mr. F. H. Preston, Lond.; Mr. L. C. Perkins, Brooklyn, U.S.A.; The Philmar Co., St. Louis, U.S.A.; Preston Royal Infirmary, Secretary of.

Q.—Messrs. Quibell Bros., Newark.

R.—Royal College of Surgeons of England, Lond., Secretary of; Royal Institute of Public Health, Lond., Principal of; Royal United Hospital, Bath, Secretary of; Royal Infirmary, Liverpool, Secretary of; Mr. F. Robertson, Nuneaton; Royal Meteorological Society, Lond.; Royal Society of Arts, Lond.; Royal Society, Lond., Assistant Secretary of; Dr. Hugh H. Riddle, Lond.; Ramsay Parish Council, Clerk to the; Dr. H. E. Ridewood, Vancouver, B.C.; Dr. D. Ross, Lond.; Mr. Stanley J. Rowe, Beckenham.

S.—Messrs. G. Street and Co., Lond.; Scarborough Hospital and Dispensary, Hon. Secretary of; Messrs. Siemens Bros. and Co., Lond.; Mr. R. H. Jocelyn Swan, Lond.; Dr. W. F. Spencer, Plymouth; Messrs. Spottiswoode, Dixon, and Hunting, Lond.; Lieutenant-Colonel Henry Smith, I.M.S., Amritsar; Mr. Gilbert I. Strachan, Glasgow; Mr. L. Story, Dewsbury; Dr. Douglas Stanley, Birmingham; Mr. C. N. Saklanha, Lond.; State of Illinois Charities Commission, Springfield, U.S.A.; Messrs. Spiers and Pond, Lond.; Messrs. Smith and Sheppard, Lond.; Sir George H. Savage, Lond.; Stowmarket Urban District Council, Clerk of.

T.—Sir W. J. Thompson, Dublin; Dr. Wilson Tyson, Lowestoft.

U.—University College, Lond., Provost of.

W.—Messrs. J. Williams and Son, Bradford; Messrs. J. Woodhead and Sons, Huddersfield; Western General Dispensary, Lond., Hon. Secretary of; Messrs. Willows, Francis, Butler, and Thompson, Lond.; Dr. W. G. Walford, Lond.; Walsall and District Hospital, Secretary of; Messrs. R. F. White and Son, Lond.; Windovers, Lond., Secretary of; Dr. Gordon B. Ward, Lond.; Dr. Alfred C. Warren, Lond.; Mr. J. Walker, Lond.; Mr. C. J. Webb, Lond.; Mr. A. Wander, Lond.; Mr. A. W. West, Lond.; Messrs. A. J. Wilson and Co., Lond.; West Kent General Hospital, Maidstone, Secretary of; Messrs. Willing and Co., Lond.; Mr. K. Macfarlane Walker, Lond.; Mr. Clifford White, Lond.

Y.—Dr. R. A. Young, Lond.; Staff-Surgeon W. Percival Yetts, R.N. (retired), Peking.

## Letters, each with enclosure, are also acknowledged from—

A.—Messrs. J. Archibald and Co., Hull; Anglo-American Pharmaceutical Co., Croydon; A. R.; Major P. Atal, I.M.S., Lond.

B.—British Drug Houses, Lond.; Dr. F. C. Brodie, Ollerton; Bury Corporation, Treasurer to the; Dr. W. L. Brown, Lond.; Mr. C. Boulange, Paris; Mr. G. G. Butler, Freetown, W.A.; Mr. H. M. Baylis, Wagga Wagga; Dr. J. S. Bolton, Nottingham; Dr. G. J. Blackmore, Christchurch, New Zealand; Bayer Co., Lond.; Mr. A. Barker, Lond.; Birmingham General Hospital, Secretary of; Bradford Guardians, Clerk to the; Birmingham and Midland Hospital for Skin Diseases, Secretary of; Dr. J. S. Bolton, Wakefield; Mr. R. E. Brown, Willington; Mr. J. A. Barth, Leipzig; Mr. A. B. Barrow, Lond.

C.—Mr. G. L. Cheatle, Lond.; Mr. W. H. Crowly, Burnham; Mr. F. C. Cooke, Halifax; Mrs. Wilberforce Clarke, Torquay; Dr. E. Carmichael, Edinburgh; Messrs. Callard, Stewart, and Watt, Lond.; Canada, High Commissioner for, Lond.; Coton Hill Hospital, Stafford, Clerk to the; Dr. S. C. Carias, La Victoria, Venezuela; Dr. H. B. Christensen, New Westminster, B.C.; Mrs. Clegg, Newton-le-Willows; Dr. H. W. Crowe, Yelverton; Dr. J. G. Christie, Buckie; Croydon Corporation, Accountant to the; Mr. W. H. Cave, Paisley; Messrs. Coop, Lond.; College of Preceptors, Lond., Secretary of; Clayton Hospital, Wakefield, Hon. Secretary of; C. P.

D.—Messrs. Dalrosa, Edinburgh; David Lewis Northern Hospital, Liverpool, Secretary of; Mr. R. Dunstan, Paignton; Mr. N. K. Dutt, Cambridge; Devon County Asylum, Exminster, Clerk to the

E.—Mr. R. W. Everard, Ulceby.

F.—Farnham House, Finglas, Medical Superintendent of; Miss Francis, Lond.

G.—Dr. A. F. Galloway, Lond.; Dr. S. Gill, Formby; Messrs. Grantham and Co., Reading; Dr. J. B. Gonella, Buenos Aires; Dr. S. Gray, Nottingham; Mr. F. H. Godsell, Lond.

H.—Dr. A. D. Hamilton, Obuasi; Mr. G. S. Hughes, York; Mr. W. H. Haw, Knysna; H. B. C. C.; Dr. J. Hunter, Invercargill; Dr. R. Hannah, Liverpool; H. H.; Dr. W. B. Harry, Briton Ferry; Messrs. F. Holland and Son, Lond.; H. W.

J.—Mr. W. Judd, Lond.; J. J. A.; Mr. J. Owen James, Cwmtillery; Mr. T. D. Jago, Lond.; J. C. B.; J. D. M.

K.—Mr. R. Keeble, Bagshot.

L.—Dr. J. C. G. Ledingham, Lond.; Mr. T. S. Logan, Exminster; Lieutenant-Colonel Sir W. Leishman, Leatherhead.

M.—Dr. D. McColl, Tamworth; Dr. J. E. Macllwaine, Belfast; Dr. D. Millar, Winterton; Manor Valley Sanatorium, Peebles, Treasurer to the; Dr. L. Molloy, Blackpool; Dr. C. Mayer, Baroda; Mr. B. J. Mayne, Carn Brea; Mrs. McHardy, Dumfries; Mr. A. McKim, Montreal; Messrs. Meister, Lucius, and Brüning, Lond.; Captain L. H. L. Mackenzie, I.M.S., Dera Ismail Khan; Lieutenant-Colonel J. J. de Z. Marshall, R.A.M.C., Thames Ditton; Mr. E. P. Milner, Middlesbrough; Mr. S. W. Macllwaine, Clevedon; M. G.

N.—Mr. J. Newcombe, Epping; Newcastle-upon-Tyne Corporation, Treasurer to the; Mr. J. C. Needes, Lond.

O.—Mr. C. A. P. Osburne, Norwich.

P.—Mr. F. E. Potter, Lond.; Pearson's Antiseptic Co., Lond.; Dr. E. J. Parry, Pontycymmer; Messrs. Porteous and Co., Glasgow; Dr. P. Pope, Lond.; Dr. A. R. Parsons, Dublin.

R.—Mr. W. Rayner, Cheltenham; Royal Albert Edward Infirmary, Wigan, Secretary of; R. F.; Registered Nurses' Society, Lond., Secretary of.

S.—Mr. E. M. Stockdale, Liverpool; Sheffield University, Registrar of; Springfield State Hospital, Sykesville, U.S.A., Superintendent of; Messrs. W. H. Smith and Son, Manchester; St. John's Hospital, Manchester, Secretary of; St. Helens Corporation, Treasurer to the; Mr. A. Sieger, Greenock; Messrs. W. H. Smith and Son, Liverpool; Stoke-on-Trent Education Committee, Director of; Mr. J. C. Smyth, Benenden; S. P. Charges Co., St. Helens; Mr. Kellett Smith, Eastbourne; S. G. M.; S., Ravenscourt Park; Stockport Infirmary, Secretary of; Messrs. W. H. Smith and Son, Lond.; Miss A. E. Stoney, Lond.; Mr. H. Stemp, Little Bromwich; Mr. P. C. Shepheard, Aylsham; Dr. H. Seidelin, Liverpool.

T.—Dr. Wu Lien Teh, Harbin; Messrs. W. Thacker and Co., Lond.; Tulane Education Fund, New Orleans, Secretary of; T. N. C. B.; Tunbridge Wells General Hospital, Secretary of; Tiverton Hospital, Matron of.

W.—Dr. C. C. Walker, Bangkok; Mr. G. J. Williams, Pontardulais; Wrexham Infirmary, Secretary of; Messrs. Ward, Lond.; Mr. J. R. Webb, Foots Cray, Australia; *Western Morning News*, Barnstaple, Manager of; Wakefield Corporation, Accountant to the; Mr. J. Wannamaker, Paris; Dr. A. C. Wilson, Formby; Messrs. F. Williams and Co., Lond; Messrs. Wander, Lond.

Y.—Yost Typewriter Co., Lond.